

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

1947 Galileo Court, Suite 103; Davis, CA 95618

Emission Evaluation

ENGINEER: Eugene Rubin

FACILITY NAME: University of California, Davis

LOCATION: The equipment is located at 675 Tercero Hall Circle, Campos Zone E067, CAAN 4049 (Central Heating and Cooling Plant) in Davis. The equipment is not located within 1,000 feet of a K-12 school and is not subject to the requirements of H&S 42301.6

PROPOSAL: The facility is proposing a significant Title V permit modification. This ATC is for the modification of P-83-06 to allow 30 ppm NOX for a 2 hour startup and shutdown period. The applicant is not proposing to change the emissions or fuel usage for this permit.

The facility is currently operating under Title V Operating Permit F-00454-21, effective September 25, 2012. This evaluation will serve as both the District emission evaluation and the Title V Statement of Basis. This evaluation reflects only the requirements pertaining to C-13-75. Emission units that are not affected by this proposal were evaluated in the original Statement of Basis or the subsequent iterations and will not be reviewed in this evaluation.

The changes to the Title V permit will include changes evaluated under ATC C-13-42, C-13-72, and C-13-75

PROCESS: Natural gas boiler used to generate steam

FLOW DIAGRAM: None required

IDENTIFICATION: P-83-06(a) (reserved)

EQUIPMENT: 180 MMBtu/hr, natural gas fired Rentech boiler with diesel back-up fuel, Model D, Serial No. 2006-53 (Boiler #4)

CONTROL EQUIPMENT: COEN Low NOx burner, Model No. QLN; selective catalytic reduction (SCR); and oxidation catalyst

APPLICATION DATA:

ATC #	C-13-75
SIC Code #	8221
UTM E	608.8 km
UTM N	4266.2 km

	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Boiler Heat Input Rating =	180 MMBtu/hr	BR	C-05-237

Max. Operational Schedule:			
<u>Natural Gas</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Daily =	24 hours	HD	C-05-237
1st Quarter =	90 days	Q1	C-05-237
2nd Quarter =	91 days	Q2	C-05-237
3rd Quarter =	92 days	Q3	C-05-237
4th Quarter =	92 days	Q4	C-05-237
Yearly =	365 days	DY	C-05-237

<u>ULSD</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Daily (hours) =	24 hours	FO	C-05-237
1st Quarter (hours) =	96 hours	F1	C-05-237
2nd Quarter (hours) =	96 hours	F2	C-05-237
3rd Quarter (hours) =	96 hours	F3	C-05-237

4th Quarter (hours) =	96 hours	F4	C-05-237
Yearly (hours) =	384 hours	FY	C-05-237

ASSUMPTIONS:

	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
VOC Molecular Weight =	16.0 lb/mole	MWv	District
CO Molecular Weight =	28.0 lb/mole	MWco	District
NO2 Molecular Weight =	46.0 lb/mole	MWno2	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
SO2 Molecular Weight =	64.0 lb/mole	MWso2	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
NH3 Molecular Weight =	17.0 lb/mole	MWnh3	District
Flue Gas to Fuel Ratio - Nat. Gas =	0.618 moles/lb @ 3% O2	NNG	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Flue Gas to Fuel Ratio - Fuel Oil =	0.554 moles/lb @ 3% O2	NFO	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Higher Heating Value - Nat. Gas =	23,440 Btu/lb	HHN	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Higher Heating Value - Fuel Oil =	19,100 Btu/lb	HHF	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Natural Gas Fuel Btu Content =	1,000 Btu/scf	HVN	District
Fuel Oil Fuel Btu Content =	140,000 Btu/gal	HVF	AP-42, Sec. 1.3, pg. 8 (9/98)
F-Factor =	8,710 scf/MMBtu	FF	District
Standard Molar Volume =	385 scf/mole	MV	District
Max. Sulfur Content of ULSD =	0.0015 %	SC	Applicant
Rule 2.27 Regulatory Constant =	36.12	RC	District Rule 2.27

Max. Fuel Consumption:

<u>Natural Gas</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Max. Daily Natural Gas Usage =	4.32 million cubic feet	Td	BR / HVN * HD
Max. 1st Qtr. Natural Gas Usage =	388.80 million cubic feet	T1	BR / HVN * HD * Q1
Max. 2nd Qtr. Natural Gas Usage =	393.12 million cubic feet	T2	BR / HVN * HD * Q2
Max. 3rd Qtr. Natural Gas Usage =	397.44 million cubic feet	T3	BR / HVN * HD * Q3
Max. 4th Qtr. Natural Gas Usage =	397.44 million cubic feet	T4	BR / HVN * HD * Q4
Max. Yearly Natural Gas Usage =	1,576.80 million cubic feet	Ty	BR / HVN * HD * DY

<u>ULSD</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Max. Hourly ULSD Usage =	1,338 gallons/hour	Th'	Applicant
Max. Daily ULSD Usage =	32,112 gallons/day	Td'	Th' * FO
Max. 1st Qtr. ULSD Usage =	128,448 gallons/qtr	T1'	Th' * F1
Max. 2nd Qtr. ULSD Usage =	128,448 gallons/qtr	T2'	Th' * F2
Max. 3rd Qtr. ULSD Usage =	128,448 gallons/qtr	T3'	Th' * F3
Max. 4th Qtr. ULSD Usage =	128,448 gallons/qtr	T4'	Th' * F4
Max. Yearly ULSD Usage =	513,792 gallons/year	Ty'	Th' * FY

EMISSION FACTORS:

<u>Natural Gas</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
VOC	4.22 lb/MMScf ¹	EFvoc	10 ppmv
CO	3.69 lb/MMScf ²	EFco	5 ppmv
NOx (2-hr Start/Shut)	36.38 lb/MMScf ³	EFnox-ss	30 ppmv
NOx (3-hr avg)	10.92 lb/MMScf ³	EFnox-hr	9 ppmv
NOx (qtr avg)	6.06 lb/MMScf ³	EFnox-qtr	5 ppmv
SOx	0.6 lb/MMScf	EFsox	AP-42 Table 1.4-2 (7/98) ⁴
TSP/PM10	6.0 lb/MMScf	EFpm	Manufacturer's Data ⁵

1) Conversion of the Manufacturer's Emission Data: [VOC, lb/MMScf] = [VOC, ppm @ 3% O2] * MWv * NNG * HVN / HHN

2) Conversion of the Manufacturer's Emission Data: [CO, lb/MMScf] = [CO, ppm @ 3% O2] * MWco * NNG * HVN / HHN

3) Conversion of the Manufacturer's Emission Data: [NOx, lb/MMScf] = [NOx, ppm @ 3% O2] * MWno2 * NNG * HVN / HHV

4) Assumes a 100% conversion of the sulfur in natural gas to SO2.

5) 0.006 lb/ MMBtu * 1,000 MMBtu / 1 MMScf.

<u>ULSD</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
VOC	0.78 lb/1,000 gallons ¹	EFvoc'	12 ppmv

CO	1.14	lb/1,000 gallons ²	EFco'	10	ppmv
NOx	2.43	lb/1,000 gallons ³	EFnox'	13	ppmv
SOx	0.24	lb/1,000 gallons	EFsox'	AP-42, Table 1.3-1, 9/98 ⁴	
TSP/PM10	5.60	lb/1,000 gallons	EFpm'	Manufacturer's Data ⁵	

- 1) Conversion of the Manuf.'s Emis. Data: [VOC, lb/1,000 gallons] = [VOC, ppm @ 3% O₂] * MW_v * NFO * HVF / HHF / 1,000 gal.
- 2) Conversion of the Manuf.'s Emis. Data: [CO, lb/1,000 gallons] = [CO, ppm @ 3% O₂] * MW_{co} * NFO * HVF / HHF / 1,000 gal.
- 3) Conversion of the Manuf.'s Emis. Data: [NOx, lb/1,000 gallons] = [NOx, ppm @ 3% O₂] * MW_{no2} * NFO * HVF / HHF / 1,000 gal.
- 4) 157 * Maximum Sulfur Content of ULSD [%]
- 5) 0.040 lbs/MMBtu * HVF * 1 MMBtu / 1,000,000 Btu * 1,000 gallons.

NH3 Injection		Units	Formula Symbol		Reference
NH3 - Natural Gas	4.48	lb/MMScf ¹	EFnh3	10	ppmv
NH3 - Fuel Oil	0.69	lb/1,000 gallons ²	EFnh3'	10	ppmv

- 1) Conversion of the Manufacturer's Emission Data: [NH3, lb/MMScf] = [NH3, ppm @ 3% O₂] * MW_{nh3} * NNG * HVN / HHN
- 2) Conversion of the Manuf.'s Emis. Data: [NH3, lb/1,000 gallons] = [NH3, ppm @ 3% O₂] * MW_{nh3} * NFO * HVF / HHF / 1,000 gal.

CALCULATIONS:

1. Determine Diesel NOx Emission Rate:

$$\text{Fuel Oil NOx Emission Rate} = \text{NOx ppm} * \text{MW}_{\text{no2}} * \text{NFO} / \text{HHF} = 0.017 \text{ lb/MMBtu}$$

2. Determine Annual Heat Input - Natural Gas:

$$\text{Annual Heat Input} = \text{Ty} * (1,000,000 \text{ scf} / 1 \text{ MMscf}) * (1 \text{ Therm} / 100 \text{ scf}) = 15,768,000 \text{ therms/year}$$

3. Determine Annual Heat Input - Diesel:

$$\text{Annual Heat Input} = \text{Ty}' * \text{HVF} * (1 \text{ Therm} / 100,000 \text{ Btu}) = 719,309 \text{ therms/year}$$

EMISSION CALCULATIONS:

TOTAL potential to emit (quarterly) is calculated differently depending on whether daily potential to emit (PTE) is higher on natural gas or ULSD. If daily PTE is higher on natural gas than ULSD, the TOTAL is then equal to the calculated natural gas emissions (per quarter). If daily PTE is higher on ULSD than natural gas, the TOTAL is equal to the maximum number of days operating on ULSD (per quarter) times the daily potential on ULSD plus the daily PTE on natural gas times the remaining number of days per quarter. For NOx, when fired on natural gas, the hourly PTE is based on the 2 hour startup and shut down average NOx emission limit of 30 ppmv, the daily PTE for natural gas is based on the 3 hour average NOx emission limit of 9 ppmv and the quarterly/yearly PTE is based on the quarterly average NOx emission limit of 5 ppmv.

1. Determine VOC Emissions:

	Natural Gas	ULSD	TOTAL
Max Daily = EFvoc * Td or EFvoc' * Td' =	18.2	25.0	25.0 lb/day
1st Quarter = EFvoc * T1 or EFvoc' * T1' =	1640	100	1,667 lb/quarter
2nd Quarter = EFvoc * T2 or EFvoc' * T2' =	1658	100	1,686 lb/quarter
3rd Quarter = EFvoc * T3 or EFvoc' * T3' =	1677	100	1,704 lb/quarter
4th Quarter = EFvoc * T4 or EFvoc' * T4' =	1677	100	1,704 lb/quarter
Max Yearly = EFvoc * Ty/2000 or EFvoc' * Ty'/2000 =	3.33	0.20	3.38 tons/year

2. Determine CO Emissions:

Max Daily = EFco * Td or EFco' * Td' =	15.9	36.5	36.5 lb/day
1st Quarter = EFco * T1 or EFco' * T1' =	1435	146	1,517 lb/quarter
2nd Quarter = EFco * T2 or EFco' * T2' =	1451	146	1,533 lb/quarter
3rd Quarter = EFco * T3 or EFco' * T3' =	1467	146	1,549 lb/quarter
4th Quarter = EFco * T4 or EFco' * T4' =	1467	146	1,549 lb/quarter
Max Yearly = EFco * Ty/2000 or EFco' * Ty'/2000 =	2.91	0.29	3.07 tons/year

3. Determine NOx Emissions:

Max Hourly = EFnox-ss * Td * (1 day / 24 hours) or EFnox' * Td/24 =	6.549	3.249	6.5 lb/hour
Max Daily = EFnox-hr * Td or EFnox' * Td' =	47.2	78.0	78.0 lb/day
1st Quarter = EFnox-qtr * T1 or EFnox' * T1' =	2358	312	2565 lb/quarter
2nd Quarter = EFnox-qtr * T2 or EFnox' * T2' =	2384	312	2591 lb/quarter
3rd Quarter = EFnox-qtr * T3 or EFnox' * T3' =	2410	312	2617 lb/quarter
4th Quarter = EFnox-qtr * T4 or EFnox' * T4' =	2410	312	2617 lb/quarter
Max Yearly = EFnox-qtr * Ty/2000 or EFnox' * Ty'/2000 =	4.78	0.62	5.20 tons/year

4. Determine SOx Emissions:

Max Hourly = Max Daily SOx Emissions * (1 day / 24 hours) =	0.108	0.315	0.315 lb/hour
Max Daily = EFsox * Td or EFsox' * Td' =	2.6	7.6	7.6 lb/day
1st Quarter = EFsox * T1 or EFsox' * T1' =	233	30	253 lb/quarter
2nd Quarter = EFsox * T2 or EFsox' * T2' =	236	30	256 lb/quarter
3rd Quarter = EFsox * T3 or EFsox' * T3' =	238	30	258 lb/quarter
4th Quarter = EFsox * T4 or EFsox' * T4' =	238	30	258 lb/quarter
Max Yearly = EFsox * Ty/2000 or EFsox' * Ty'/2000 =	0.47	0.06	0.51 tons/year

5. Determine TSP/PM10 Emissions:

Max Hourly = Max Daily TSP/PM10 Ems * (1 day / 24 hours) =	1.080	7.493	7.493 lb/hour
Max Daily = EFpm * Td or EFpm' * Td' =	25.9	179.8	179.8 lb/day
1st Quarter = EFpm * T1 or EFpm' * T1' =	2,333	719	2,948 lb/quarter
2nd Quarter = EFpm * T2 or EFpm' * T2' =	2,359	719	2,974 lb/quarter
3rd Quarter = EFpm * T3 or EFpm' * T3' =	2,385	719	3,000 lb/quarter
4th Quarter = EFpm * T4 or EFpm' * T4' =	2,385	719	3,000 lb/quarter
Max Yearly = EFpm * Ty/2000 or EFpm' * Ty'/2000 =	4.73	1.44	5.96 tons/year

6. Determine NH3 Emissions:

Max Daily = EFnh3 * Td or EFnh3' * Td' =	19.4	22.2	22.2 lb/day
1st Quarter = EFnh3 * T1 or EFnh3' * T1' =	1,743	89	1,754 lb/quarter
2nd Quarter = EFnh3 * T2 or EFnh3' * T2' =	1,762	89	1,773 lb/quarter
3rd Quarter = EFnh3 * T3 or EFnh3' * T3' =	1,781	89	1,793 lb/quarter
4th Quarter = EFnh3 * T4 or EFnh3' * T4' =	1,781	89	1,793 lb/quarter
Max Yearly = EFnh3 * Ty/2000 or EFnh3' * Ty'/2000 =	3.53	0.18	3.56 tons/year

7. Determine Sulfur Emissions Concentration:

$$\text{SOx \%} = [\text{SOx, lb/day}] * (1\text{day}/24\text{hours}) * \text{MV} / \text{MWso2} / \text{BR} / \text{FF} * 100\% = 0.00012 \%$$

8. Determine Particulate Matter Emissions Concentration:

$$\text{PM Conc.} = [\text{TSP, lbs/day}] * (1\text{day}/24\text{hours}) / \text{BR} / \text{FF} * (7,000 \text{ grains/lb}) = 0.033 \text{ gr/dscf}$$

RULE & REGULATION COMPLIANCE EVALUATION:

District Rule 2.3-Ringelmann

This rule specifies the allowable opacity limit for all sources operating in the District.

Compliance Status: The rule applies to any visible emissions at the stationary source. The version of the rule used in this evaluation is the rule adopted on January 13, 2010 and included in the current California State Implementation Plan (SIP). The source is currently in compliance with the requirements of the rule.

Requirement: A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.2 a. of this rule.

Permit Condition: The permit holder shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than three (3) minutes in any one hour which is:

- a. As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart; or
- b. Greater than 20% opacity. [District Rule 2.3 and 3.4]

District Rule 2.5-Nuisance

This rule requires that sources are not a public nuisance.

Compliance Status: The rule applies to all emission units at the stationary source. The source is currently in compliance with the requirements of the rule.

Permit Condition: The Permit Holder shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property.

A condition will not be placed on the ATC, but will be added to the PTO upon implementation.

[The permit condition is federally enforceable because it derives from District Rule 2.5 - Nuisance which is currently part of the SIP. The District is taking steps to remove District Rule 2.5 from the SIP. Once the U.S. Environmental Protection Agency (EPA) has taken final action to remove District Rule 2.5 from the SIP, this permit condition will become State-enforceable only.]

District Rule 2.11 - Particulate Matter

This rule specifies the allowable particulate matter (PM) emission rate at standard conditions. For the purpose of this evaluation, the PM emissions are considered to be 100% PM10 (PM with an aerodynamic diameter of 10 microns or less).

Compliance Status: The boiler is subject to this rule. The version of the rule used in this evaluation is the rule adopted on January 13, 2010 and included in the current SIP. The proposed boiler is currently in compliance with the requirements of the rule.

Requirement: Except as otherwise permitted by law, no person shall release or discharge into the atmosphere, from any source, particulate matter in excess of 0.1 grains per cubic foot of exhaust volume as calculated standard conditions. [SIP approved version of District Rule 2.11]

As shown above in Emission Calculations #8, the PM concentration is expected to be in compliance with this requirement.

<u>Emission Rate (gr/dscf)</u>	<u>Allowable Rate (gr/dscf)</u>	<u>Compliance</u>
0.033	0.1	Yes

Permit Condition: The permit holder shall not release or discharge into the atmosphere, from any single source operation, dust fumes or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions. [District Rule 2.3 and District Rule 3.4]

District Rule 2.12 Specific Contaminants

This rule specifies the allowable sulfur dioxide and particulate matter combustion contaminant emission rates at standard conditions. For the purposes of this evaluation, the sulfur oxide (SOx) emissions are considered to be 100% SO2.

Compliance Status: The boiler is subject to this rule. The rule applies to any source operation which emits, or may emit sulfur gaseous emissions and particulate matter combustion contaminants. The version of the rule used in this evaluation is the rule adopted on January 13, 2010 and included in the current SIP. The proposed boiler is currently in compliance with the requirements of the rule.

Requirement: A person shall not discharge into the atmosphere from any single source of emission whatsoever, any one or more of the following contaminants, in any state or combination thereof, in excess of the following concentrations at the point of discharge:

- A. Sulfur compounds calculated as sulfur dioxide (SO2) 0.2%, by volume at standard conditions.

B. Particulate Matter Combustion Contaminants: 0.1 grains per cubic foot of gas calculated to 12 percent of carbon dioxide (CO₂) at standard conditions.

As shown above in Emission Calculations #7, the sulfur concentration (in percent) is expected to be in compliance with the requirement. Compliance with the particulate limit is demonstrated in Calculation #8 (See 2.11).

<u>Emission Rate (% SO_x as SO₂)</u>	<u>Allowable Rate (% SO_x as SO₂)</u>	<u>Compliance</u>
0.00012	0.2	Yes

Permit Condition: SO_x emissions shall not exceed 7.6 lb/day, 253 lb/1st, 256 lb/2nd, 258 lb/3rd, and 258 lb/4th calendar quarter, and 0.51 tons/year. [District Rule 3.4/C-13-75]

District Rule 2.16 - Fuel Burning or Power Generation

This rule specifies the allowable sulfur dioxide, nitrogen oxides calculated as nitrogen dioxide, and combustion particulate limits for non-mobile fuel burning equipment for a heat or power generating unit in the District.

Compliance Status: The boiler is subject to this rule. The version of the rule used in this evaluation is the rule adopted on October 1, 1971 and included in the current SIP. The proposed boiler is currently in compliance with the requirements of the rule.

Requirement: A person shall not build, expand, or operate any non-mobile fuel burning equipment for a heat or power generator unit unless the discharge into the atmosphere of contaminants will not and does not exceed any one or more of the following rates:

1. 200 pounds per hour of sulfur compounds, calculated as SO₂;
2. 140 pounds per hour of nitrogen oxides, calculated as nitrogen dioxide (NO₂);
3. 40 pounds per hour of combustion particulate derived from the fuel. [SIP approved version of District Rule 2.16]

<u>Pollutant</u>	<u>Allowable</u>		<u>Actual</u>		<u>Compliance</u>
SO _x	200	lb/hr	0.3	lb/hr	Yes
NO _x	140	lb/hr	6.5	lb/hr	Yes
PM	40	lb/hr	7.5	lb/hr	Yes

Subsuming Demonstration: The requirements of the SIP can be subsumed by the Authority of District Rule 3.4, New Source Review. P-83-06(a) is also subject to the federally applicable SO_x emission limit of 7.6 lbs/day, NO_x emission limit of 78.0 lbs/day and particulate emission limit of 179.8 lbs/day (established by Rule 3.4, Section 409.2).

Permit Condition: SO_x emissions shall not exceed 7.6 lb/day, 253 lb/1st, 256 lb/2nd, 258 lb/3rd, and 258 lb/4th calendar quarter, and 0.51 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: NO_x emissions shall not exceed 78.0 lb/day, 2565 lb/1st calendar quarter, 2591 lb/2nd calendar quarter, 2617 3rd calendar quarter, 2617 lb/4th calendar quarter, and 5.20 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: PM₁₀ emissions shall not exceed 179.8 lb/day, 2948 lb/1st calendar quarter, 2948 lb/2nd calendar quarter, 3000 lb/3rd calendar quarter, 3000 lb/4th calendar quarter and 5.96 tons/year. [District Rule 3.4/C-13-75]

District Rule 2.27 - Industrial, Institutional, & Commercial Boilers, Steam Generators and Process Heaters

This rule limits emissions of nitrogen oxides (Nox) and carbon monoxide (CO) from industrial, institutional, and commercial boilers, steam generators, and process heaters.

Compliance Status: The version of the rule used in this evaluation is the rule adopted on August 14, 1996 and included in the current SIP. The rule applies to units with rated heat inputs of greater than or equal to 5 million Btu per hour. This boiler is subject to this rule. The rule requirements are addressed below.

- 110: Because the unit can comply with the requirements of section 301 (see below), the ATC will not contain a condition limiting the hours of operation on diesel fuel.

- 301: As shown above in Calculations, Section 2 and 3, the annual heat input of the unit is 15,768,000 therms/year when operated on natural gas and 719,309 therms/year when operated on diesel. Therefore, the boiler is subject to this section of the rule. The table, below,

shows that the boiler is in compliance with this section.

<u>Pollutant</u>	<u>Allowable</u>		<u>Permitted</u>		<u>Compliance</u>
CO - natural gas	400	ppmv	5	ppmv	Yes
CO - diesel	400	ppmv	10	ppmv	Yes
NOx - natural gas	30	ppmv	30	ppmv	Yes
NOx - natural gas	0.036	lb/MMBtu	0.036	lb/MMBtu	Yes
NOx - diesel	40	ppmv	13	ppmv	Yes
NOx - diesel	0.052	lb/MMBtu	0.017	lb/MMBtu	Yes

- 302: As shown above in Calculations, Section 2 and 3, the annual heat input of the unit is 15,768,000 therms/year when operated on natural gas and 719,309 therms/year when operated on diesel. Therefore, the boiler is not subject to this section.
- 303.1: The boiler does not combust gaseous and nongaseous fuels simultaneously. Therefore, this section does not apply. The ATC will restrict the combustion of fuel oil to periods when natural gas is unavailable for purchase only.
- 303.2: The boiler employs flue-gas NOx reducing technology, the applicant will be required to source test the unit once every 12 months.
- 401: Section 401 contains a compliance schedule that has already passed.
- 402.1: The applicant has proposed parts-per-million-by-volume emission limits and will be required to demonstrate compliance with those limits.
- 402.2: The boiler is subject to this section of the rule. The ATC will include the requirements for emission determinations.
- 402.3: Section 402.3 contains calculation requirements. No ATC condition is necessary.
- 402.4: Section 402.4 contains calculation requirements. No ATC condition is necessary.
- 402.5: Source tests shall, at a minimum, meet the testing requirements of Section 402.5. The current practice of the District is to require three, 30-minute sampling runs - which exceeds the requirements of this section.
- 402.6: The Permit Holder has already completed initial source testing. Because operational changes are not being made to the boiler the Permit Holder will not be required to perform additional source testing.
- 402.7: This section requires annual emissions source testing or tune-ups. Due to the high boiler heat input rating, the District will require annual source testing without the option of annual tune-ups.
- 403: The boiler is subject to this section of the rule. The ATC will include the requirements for source test report submittal.
- 501: The boiler is subject to this section of the rule. The ATC will include the requirements for record-keeping including requirements for natural gas and diesel fuel meters to assist in record-keeping.
- 502: The boiler is subject to this section of the rule. The ATC will include the requirements for test methods.
- 600: The boiler will not be given the option for tune-ups in lieu of source testing. Therefore, this section does not apply.

District Rule 3.1-General Permit Requirements

The purpose of this rule is to provide an orderly procedure for the review of new sources of air pollution and of the modification and operation of existing sources through the issuance of permits.

Compliance Status: The source has satisfied the provisions of General Permit Requirements. The rule applies to all emission units at the stationary source. The version of the rule used in this evaluation was adopted on February 23, 1994 and is part of the current SIP. The General Permit Requirements are shown below.

Permit Condition: No person shall build, erect, alter, or replace any facility, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants, without first obtaining an authorization to construct from the Air Pollution Control Officer as specified in Section 401 of District Rule 3.1. [District Rule 3.1, §301.1]

Permit Condition: No person shall operate any facility, article, machine, equipment, or other contrivance, for which an authorization to construct is required by District Rules and Regulations without first obtaining a written permit from the Air Pollution Control Officer. [District Rule 3.1, §302.1]

Permit Condition: No person shall operate any facility, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, without obtaining a permit from the Air Pollution Control Officer or the Hearing Board. [District Rule 3.1, §302.2]

Permit Condition: (Title V permit only) To assure compliance with all applicable regulations, the Air Pollution Control Officer may impose written conditions on any authorization to construct or permit to operate. The Air Pollution Control Officer may, after 30-day notice to the permittee, add or amend written conditions on any permit upon annual renewal to ensure compliance with and enforceability of any

applicable rule or regulation. Additional provisions, as required by Title V of the Federal Clean Air Act, for the reopening of permits are specified in Rule 3.8, FEDERAL OPERATING PERMITS. Commencing work or operation under such a revised permits shall be deemed acceptance of all of the conditions so specified. [District Rule 3.1, §402]

Permit Condition: The owner or operator of any facility, article, machine, equipment, or other contrivance for which a permit to operate is in effect shall notify the District office whenever a breakdown, malfunction, or operational upset condition exists which would tend to increase emissions of air pollutants or whenever any operating condition contrary to any provision of the permit to operate exists. Such notice shall be given to the District no later than four hours after occurrence during regular workday hours or no later than two hours of the District workday following an occurrence not during regular District workday hours. The notice shall provide the District information as to causes and corrective action being taken, with a schedule for return to required operating conditions. [District Rule 3.1, §405.3]

District Rule 3.4-New Source Review

This rule applies to all new stationary sources and emissions units and all modifications to existing stationary sources and emissions units which are subject to Rule 3.1, General Permit Requirements, and which, after construction or modification, emit or may emit any affected pollutants. This rule shall not apply to prescribed burning of forest, agriculture or range land, road construction or any other non-point source common to timber harvesting or agricultural practices. The purpose of this rule is to provide for the review of new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct to such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.

Compliance Status: The source has satisfied the provisions of New Source Review. The New Source Review requirements will be imposed on the Authority to Construct (ATC) issued to the source. The version of the rule used in this evaluation was adopted on August 13, 1997 and is part of the current SIP.

PROPOSED EMISSION SUMMARY FOR NEW OR MODIFIED PERMIT

	<u>Daily</u>	<u>Yearly</u>	
VOC	25.0 lb	3.38 tons	Use for annual billing
CO	36.5 lb	3.07 tons	Use for annual billing
NOx	78.0 lb	5.20 tons	Use for annual billing
SOx	7.6 lb	0.51 tons	Use for annual billing
PM10	179.8 lb	5.96 tons	Use for annual billing

	<u>Quarterly</u>			
	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	1,667	1,686	1,704	1,704
CO (lb)	1,517	1,533	1,549	1,549
NOx (lb)	2,565	2,591	2,617	2,617
SOx (lb)	253	256	258	258
PM10 (lb)	2,948	2,974	3,000	3,000

Previous quarterly potential to emit for modified permit*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	1,667	1,686	1,704	1,704
CO (lb)	1,517	1,533	1,549	1,549
NOx (lb)	2,565	2,591	2,617	2,617
SOx (lb)	253	256	258	258
PM10 (lb)	2,948	2,974	3,000	3,000

* From PTO P-83-06, issued 12/21/2009

Historic potential emissions for modified permit*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	1,667	1,686	1,704	1,704
CO (lb)	1,517	1,533	1,549	1,549
NOx (lb)	2,565	2,591	2,617	2,617
SOx (lb)	71	72	72	72

PM10 (lb)

826

833

840

840

* The boiler was fully offset for VOC, CO, and NOx. Therefore the historic potential emissions for VOC, CO, and NOx are equal to the previous potential to emit. Because SOx and PM10 emissions were not offset the historic potential emissions will be evaluated based on throughput. The highest throughput for this permit in the past 5 years was 504.363 mmcf of natural gas in 2011 which was 32% of natural gas permitted throughput. Because the historic emissions were not over 80% in any one year out of the last five, the historic potential is based on the past 2 years usage (or 2 of consecutive years out of the past 5 if the last 2 are not representative). The natural gas throughput for 2011 was 504.363 mmcf of natural gas and for 2012 was 368.529 mmcf of natural gas. The average of these 2 years is 28% of the natural gas throughput, therefore, the historic potential to emit will be equal to 28% of the natural gas emissions. (The diesel throughput for 2011 and 2012 was 0 gallons. Therefore the historic potential emissions for SOx and PM10 will be based off of the natural gas emissions not the total emissions as listed in the permit.)

<u>Pollutant</u>	<u>Trigger</u> (lb/day)	<u>BACT</u>		<u>Quarterly Increase</u>	<u>BACT</u>
		<u>Proposed</u> (lb/day)			
VOC	10	25		No	No
CO	250	37		No	No
NOx	10	78		No	No
SOx	80	8		No	No
PM10	80	180		No	No

OFFSETS**Quarterly permitted emissions for other permits at the stationary source***

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	11,552	11,632	11,726	11,746
CO (lb)	206,179	208,084	210,245	210,515
NOx (lb)	48,592	48,715	49,107	49,403
SOx (lb)	7,295	7,299	7,305	7,306
PM10 (lb)	8,839	8,885	8,953	8,980

* See Attached QPTE sheet

Quarterly permitted emissions for the stationary source including proposed emissions

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	13,219	13,318	13,430	13,450
CO (lb)	207,696	209,617	211,794	212,064
NOx (lb)	51,157	51,306	51,724	52,020
SOx (lb)	7,548	7,555	7,563	7,564
PM10 (lb)	11,787	11,859	11,953	11,980

Offset triggers

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	7,500	7,500	7,500	7,500
CO (lb)	49,500	49,500	49,500	49,500
NOx (lb)	7,500	7,500	7,500	7,500
SOx (lb)	13,650	13,650	13,650	13,650
PM10 (lb)	13,650	13,650	13,650	13,650

Quantity of offsets required

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	0	0	0	0
CO (lb)	0	0	0	0
NOx (lb)	0	0	0	0
SOx (lb)	0	0	0	0
PM10 (lb)	0	0	0	0

MAJOR MODIFICATION**Facility Total Potential to Emit*****Major Source Thresholds**

28.97 TPY VOC
424.42 TPY CO
156.05 TPY NOx
7.74 TPY SOx
22.74 TPY PM10**

25 TPY VOC
100 TPY CO
25 TPY NOx
100 TPY SOx
100 TPY PM10

* See QTPE sheet.

** As of December 14, 2009 the District is required to evaluate emissions of PM2.5 under Appendix S to 40 CFR 51. Under Appendix S, the major source threshold for PM2.5 is 100 tpy, the same as the major source threshold for PM10. Since PM2.5 is a subset of PM10, and this facility is not a major source for PM10, it is not a major source for PM2.5 either.

Last five year emission aggregate

5.55 TPY VOC
7.90 TPY CO
16.51 TPY NOx
0.54 TPY SOx
8.91 TPY PM10

Major Modification Thresholds

25 TPY VOC
100 TPY CO
25 TPY NOx
40 TPY SOx
25 TPY PM10

Result: The proposed modification is not a major modification

PUBLIC NOTICE

"Increase in historic potential to emit"

0 lb VOC/quarter
0 lb CO/quarter
0 lb NOx/quarter
186 lb SOx/quarter
2,160 lb PM10/quarter

Exemption level for notification

7,500 lb VOC/quarter
49,500 lb CO/quarter
7,500 lb NOx/quarter
13,650 lb SOx/quarter
13,650 lb PM10/quarter

Result: Public notice is not required

Permit Condition: VOC emissions shall not exceed 25.0 lb/day, 1667 lb/1st calendar quarter, 1686 lb/2nd calendar quarter, 1704 lb/3rd calendar quarter, and 1704 lb/4th calendar quarter, and 3.38 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: CO emissions shall not exceed 36.5 lb/day, 1517 lb/1st calendar quarter, 1533 lb/2nd calendar quarter, 1549 lb/3rd calendar quarter, 1549 lb/4th calendar quarter and 3.07 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: NOx emissions shall not exceed 78.0 lb/day, 2565 lb/1st calendar quarter, 2591 lb/2nd calendar quarter, 2617 3rd calendar quarter, 2617 lb/4th calendar quarter, and 5.20 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: SOx emissions shall not exceed 7.6 lb/day, 253 lb/1st calendar quarter, 256 lb/2nd calendar quarter, 258 lb/3rd calendar quarter, and 258 lb/4th calendar quarter, and 0.51 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: PM10 emissions shall not exceed 179.8 lb/day, 2948 lb/1st calendar quarter, 2974 lb/2nd calendar quarter, 3000 lb/3rd calendar quarter, 3000 lb/4th calendar quarter and 5.69 tons/year. [District Rule 3.4/C-13-75]

Permit Condition: The boiler shall only be fired on Public Utility Commission (PUC) pipeline natural gas or diesel fuel. [District Rule 3.4/C-13-75]

Permit Condition: Diesel fuel shall only be used when natural gas is unavailable for purchase or for equipment testing or emissions testing. [District Rule 3.4/C-13-75]

Permit Condition: The boiler shall not combust diesel fuel exceeding 0.0015% sulfur content by weight. [District Rule 3.4/C-13-75]

Permit Condition: A non-resettable, totalizing gaseous fuel flow meter or other District approved fuel tracking technology shall be installed and utilized to measure the quantity (in cubic feet) of natural gas combusted by the boiler. [District Rule 3.4/C-13-75]

Permit Condition: A non-resettable, totalizing liquid fuel flow meter or other District approved fuel tracking technology shall be installed and utilized to measure the quantity (in gallons) of diesel fuel combusted by the boiler. [District Rule 3.4/C-13-75]

Permit Condition: The boiler shall have designated periods of startup and shutdown.

- a. A startup period shall be defined as the period, not to exceed two hours, between the initial firing of the boiler after a zero fuel flow period and the time the emissions control system reaches operating temperature.
- b. A shutdown period shall be defined as the period, not to exceed two hours, during which the boiler is returned to a state of zero fuel flow and allowed to cool to ambient temperature.

Permit Condition: The emission concentrations when firing on natural gas shall not exceed the following:

- a. VOC (as methane) - 10 parts per million by volume, dry, corrected to 3% O₂;
- b. CO - 5 parts per million by volume, dry, corrected to 3% O₂;
- c. NO_x (as NO₂) - 30 parts per million by volume, dry, corrected to 3% O₂ (any quarter-hour CEMS averaging period);
- d. NO_x (as NO₂) - 9 parts per million by volume, dry, corrected to 3% O₂ (3-hour rolling average, excluding periods of start-up/shutdown);
- e. NO_x (as NO₂) - 5 parts per million by volume, dry, corrected to 3% O₂ (calendar quarter average);
- f. NH₃ - 10 parts per million by volume, dry, corrected to 3% O₂ [District Rule 3.4, §409.2/C-13-75]

Permit Condition: The emission concentrations when firing on diesel fuel shall not exceed the following:

- a. VOC (as methane) - 12 parts per million by volume, dry, corrected to 3% O₂;
- b. CO - 10 parts per million by volume, dry, corrected to 3% O₂;
- c. NO_x (as NO₂) - 13 parts per million by volume, dry, corrected to 3% O₂
- d. NH₃ - 10 parts per million by volume, dry, corrected to 3% O₂ [District Rule 3.4, §409.2/C-13-75]

Permit Condition: The Permit Holder shall perform a source test within 45 days of initial firing, and at least once every twelve (12) months thereafter, to demonstrate compliance with the following emission limitations:

- a. VOC concentration (ppmvd @ 3% O₂);
- b. CO concentration (ppmvd @ 3% O₂);
- c. NO_x concentration (ppmvd @ 3% O₂);
- d. NH₃ concentration (ppmvd @ 3% O₂). [District Rule 3.4/C-13-75]

Permit Condition: Annual source tests shall include emissions testing for each fuel that was combusted by the boiler during the previous one (1) year period. If diesel was only used for testing and maintenance purposes during the previous one (1) year period, the annual source test only needs to be performed for natural gas. [District Rule 3.4/C-13-75]

Permit Condition: Source testing shall be conducted using the following test methods (or equivalent methods as approved by the District):

- a. VOC - EPA method 18 or 25, or CARB method 100;
- b. CO - EPA method 10, or CARB method 100;
- c. NO_x (as NO₂) - EPA method 7E, or CARB method 100;
- d. Stack gas oxygen - EPA method 3 or 3a, or CARB Method 100;
- e. Flow rate - EPA method 19, or CARB Methods 1-4; and
- f. NH₃ - Bay Area Air Quality Management District (BAAQMD) Method ST-1B. [District Rule 2.27, '502.1 and '502.2, and District Rule 3.4/C-13-75]

Permit Condition: The Permit Holder shall notify the District of any violation of the 3-hour rolling average or the quarter-hour NO_x emission concentration limitation, as indicated by the CEMS, within 96 hours after such occurrence. [District Rule 3.4/C-13-75]

Permit Condition: The District must be notified prior to any compliance source test and/or RATA, and a source test/RATA protocol must be submitted for approval 30 days prior to testing. The results of the source test/RATA shall be submitted to the District within 60 days of the test date. The protocol and report shall be mailed to the attention of the Supervising Air Quality Engineer. [District Rule 3.4/C-13-75]

Permit Condition: The Permit Holder shall monitor and record the cumulative quarterly and annual natural gas (in cubic feet) and diesel (in gallons) fuel usage from their respective totalizing meter, or by any other acceptable methods approved by the District. The records shall be updated quarterly. [District Rule 3.4/C-13-75]

Permit Condition: All records required to be maintained by this permit shall be retained for the five (5) previous calendar years and made readily available for District inspection upon request. [District Rule 3.8, '302.6 and District Rule 3.4/C-13-75]

District Rule 3.8-Federal Operating Permits

This rule implements the requirements of Title V of the Federal Clean Air Act as amended in 1990 (CAA) for permits to operate. Title V provides for the establishment of operating permit programs for sources which emit regulated air pollutants, including attainment and non-attainment pollutants.

Compliance Status: The Rule was originally adopted on January 26, 1994. The most recent revision dated April 11, 2001 and is part of the current SIP. The source is currently in compliance with the requirements of the rule.

Per Section 102, this rule applies to all major sources, acid rain units subject to Title IV of the Federal Clean Air Act (CAA), solid waste incinerators, and any other sources specifically designated by the rule of US EPA.

The facility is a federal major source due to potential to emit over 25 tons VOC per year, 100 tons CO per year, and 25 tons NOx per year. The facility has an existing Title V Permit. Revisions to the Title V permit will be processed immediately following the approval of this application. The proposed revisions to the Title V permit will concurrently undergo a 30-day public comment period and a 45-day EPA comment period. Enhanced NSR has been requested by the applicant, as allowed by District Rule 3.4. The requirements of this ATC will be incorporated into the Title V permit upon written request from the applicant after all noticing has been done and the project is completed.

The facility's Title V Permit will be issued with all applicable operating, monitoring, and recordkeeping requirements. Per Section 302.6, the source will be required to maintain all required records for a period of five (5) years.

Title V General Requirements - Permit Conditions

The following conditions will not be placed on the ATC or PTO. These requirements will be included in the Title V Operating Permit only.

Permit Condition -Right of Entry:

The permit shall require that the source allow the entry of the District, ARB, or U.S. EPA officials for the purpose of inspection and sampling, including:

- a. Inspection of the stationary source, including equipment, work practices, operations, and emissions-related activity;
- b. Inspection and duplication of records required by the permit to operate; and
- c. Source sampling or other monitoring activities. [District Rule 3.8, §302.10]

Permit Condition -Compliance with Permit Conditions:

The Permit Holder shall comply with all Title V permit conditions. [District Rule 3.8, §302.11a]

The permit does not convey property rights or exclusive privilege of any sort. [District Rule 3.8, §302.11b]

Non-compliance with any permit condition is grounds for permit termination, revocation and reissuance, modification, enforcement action, or denial of permit renewal. [District Rule 3.8, §302.11c]

The Permit Holder shall not use the "need to halt or reduce a permitted activity in order to maintain compliance" as a defense for non-compliance with any permit condition. [District Rule 3.8, §302.11d]

A pending permit action or notification of anticipated non-compliance does not stay any permit condition. [District Rule 3.8, §302.11e]

Within a reasonable time period, the Permit Holder shall furnish any information requested by the APCO, in writing, for the purpose of determining:

- a. Compliance with the permit; or
- b. Whether or not cause exists for a permit or enforcement action. [District Rule 3.8, §302.11f]

Permit Condition -Emergency Provisions:

Within two weeks of an emergency event, the owner or operator shall submit to the District a properly signed contemporaneous log or other relevant evidence demonstrating that:

- a. An emergency occurred;
- b. The Permit Holder can identify the cause(s) of the emergency;
- c. The facility was being properly operated at the time of the emergency;
- d. All steps were taken to minimize the emissions resulting from the emergency; and

e. Within two working days of the emergency event, the Permit Holder provided the District with a description of the emergency and any mitigating or corrective actions taken; and
In any enforcement proceeding, the Permit Holder has the burden of proof for establishing that an emergency occurred. [District Rule 3.8, §302.12]

Permit Condition -Severability:

If any provision, clause, sentence, paragraph, section or part of these conditions for any reason is judged to be unconstitutional or invalid, such judgment shall not affect or invalidate the remainder of these conditions. [District Rule 3.8, §302.13]

Compliance Certification:

Requirement: Section 302.14(a) of Rule 3.8 requires "the responsible official shall submit a compliance certification to the U.S. EPA and the APCO every twelve (12) months unless required more frequently by an applicable requirement. All compliance reports and other documents required to be submitted to the District by the responsible official shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

Streamlining Demonstration: As shown in the following permit conditions, the standard annual compliance certification reporting language of Rule 3.8 (Federal Operating Permits), will be streamlined under the provisions of Rule 3.4 to include specific reporting and submittal dates:

Permit Condition -Compliance Certification:

The Responsible Official shall submit a compliance certification to the U.S. EPA and the APCO every twelve (12) months unless required more frequently by an applicable requirement. The twelve (12) month period will begin on January 1 and end on December 31, and will be due by January 31 for the previous reporting year, unless otherwise approved in writing by the District. All compliance reports and other documents required to be submitted to the District by the responsible official shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

The compliance certification shall identify the basis for each permit term or condition (e.g., specify the emissions limitation, standard, or work practice) and a means of monitoring compliance with the term or condition consistent with Sections 302.5, 302.6, and 302.7 of Rule 3.8. [District Rule 3.8, §302.14b]

The compliance certification shall include a statement of the compliance status, whether compliance was continuous or intermittent, and method(s) used to determine compliance for the current time period and over the entire reporting period. [District Rule 3.8, §302.14c]

The compliance certification shall include any additional inspection, monitoring, or entry requirement that may be promulgated pursuant to Sections 114(a) and 504(b) of the Federal Clean Air Act. [District Rule 3.8, §302.14d]

Permit Condition -Permit Life:

The Title V permit shall expire five years from the date of issuance. Title V permit expiration terminates the stationary source's right to operate unless a timely and complete Title V permit application for renewal has been submitted. [District Rule 3.8, §302.15]

Permit Condition -Payment of Fees:

An owner or operator shall pay the appropriate Title V permit fees on schedule. If fees are not paid on schedule, the permit is forfeited. Operation without a permit subjects the source to potential enforcement action by the District and the U.S. EPA pursuant to Section 502(a) of the CAA. [District Rule 3.8, §302.16]

Permit Condition -Permit Revision Exemption:

No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit. [District Rule 3.8, §302.22]

Permit Condition -Application Requirements:

An owner or operator shall submit a standard District application for renewal of the Title V permit, no earlier than 18 months and no later than six months before the expiration date of the current permit to operate. [District Rule 3.8, §402.2]

An owner or operator shall submit a standard District application for each emissions unit affected by a proposed permit revision that qualifies as a significant Title V permit modification. The application shall be submitted after obtaining any required preconstruction permits. Upon

request by the APCO, the owner or operator shall submit copies of the latest preconstruction permit for each affected emissions unit. The emissions unit(s) shall not commence operation until the APCO approves the permit revision. [District Rule 3.8, §402.3]

An owner or operator shall submit a standard District application for each emissions unit affected by the proposed permit revision that qualifies as a minor permit modification. The application shall be submitted after obtaining any required preconstruction permits. The emissions unit(s) shall not commence operation until the APCO approves the permit revision. In the application, the owner or operator shall include the following:

- a. A description of the proposed permit revision, any change in emissions, and additional applicable federal requirements that will apply;
- b. Proposed permit terms and conditions; and
- c. A certification by a responsible official that the permit revision meets criteria for use of minor permit modification procedures and a request that such procedures be used. [District Rule 3.8, §402.4]

Permit Condition -Permit Reopening for Cause:

Circumstances that are cause for reopening and revision of a permit include, but are not limited to, the following:

- a. The need to correct a material mistake or inaccurate statement;
- b. The need to revise or revoke a permit to operate to assure compliance with applicable federal requirements;
- c. The need to incorporate any new, revised, or additional applicable federal requirements, if the remaining authorized life of the permit is 3 years or greater, no later than 18 months after the promulgation of such requirement (where less than 3 years remain in the authorized life of the permit, the APCO shall incorporate the requirements into the permit to operate upon renewal); or
- d. Additional requirements promulgated pursuant to Title IV as they become applicable to any acid rain unit governed by the permit. [District Rule 3.8, §413.1]

Permit Condition -Recordkeeping:

The permit holder shall record maintenance of all monitoring and support information required by any applicable federal requirement, including:

- a. Date, place, and time of sampling;
- b. Operating conditions at the time of sampling;
- c. Date, place, and method of analysis; and
- d. Results of the analysis. [District Rule 3.8, §302.6a]

The permit holder shall retain records of all required monitoring data and support information for a period of at least five years from the date of sample collection, measurement, report, or application. [District Rule 3.8 §302.6b]

Permit Condition -Reporting Requirements:

Any deviation from permit requirements, including that attributable to upset conditions (as defined in the permit), shall be promptly reported to the APCO. For the purpose of this condition prompt means as soon as reasonably possible, but no later than 10 days after detection.[District Rule 3.8, §302.7a]

A semi-annual monitoring report shall be submitted at least once every six (6) consecutive calendar months and shall identify any deviation from permit requirements, including that previously reported to the APCO pursuant to Section 302.7(a) of Rule 3.8. Unless otherwise approved in writing by the District, the following shall apply:

- a. The first six (6) month monitoring period will begin on January 1 and end on June 30, and the report will be due by July 31 of the reporting year; and
- b. The second six (6) month period will begin on July 1 and end on December 31, and the report will be due on January 31 of the following calendar year.

All reports of deviation from permit requirements shall include the probable cause of the deviation and any preventive or corrective action taken. [District Rule 3.8, §302.7c]

Each monitoring report shall be accompanied by a written statement from the responsible official that certifies the truth, accuracy, and completeness of the report. [District Rule 3.8, §302.7e]

District Rule 3.20-Ozone Transport Mitigation

This emissions unit does emit VOCs or NOx, and therefore, per section 110.3, this application is not exempt from this rule.

As documented above, the facility total potential to emit is above 10 tons per year for VOC or NOx, and therefore the post-project Stationary Source Potential to Emit (SSPE) will be calculated.

Annual permitted emissions for the stationary source including proposed emissions

VOC (lb)	57,940	lbs
NOx (lb)	312,100	lbs

Annual permitted emissions for equipment which is exempt from Rule 3.4*

VOC (lb)	5,720	lbs
NOx (lb)	137,620	lbs

* See attached QPTE sheet

Post -project Stationary Source Potential to Emit (SSPE)

VOC (lb)	52,220	lbs
NOx (lb)	174,480	lbs

Because the post-project SSPE is greater than 10 tons (20,000) lbs per year for VOC or NOx, per section 301.1, calculations shall be performed to determine the quantity of mitigation required, if any.

Pre -project Stationary Source Potential to Emit (SSPE)

VOC (lb)	52,520	lbs
NOx (lb)	174,480	lbs

Quantity of offsets required by Rule 3.4

VOC (lb)	0	lbs
NOx (lb)	0	lbs

Quantity of Mitigation required by Rule 3.20

VOC (lb)	0	lbs
NOx (lb)	0	lbs

40 CFR Part 60, Subpart A - General Provisions

This regulation pertains to any stationary source that contains an affected facility (in this case, the boiler) which commences construction or modification after the date of publication of any standard in this Part. The District is currently delegated for this NSPS subpart and, therefore, the requirements of the subpart (revision 7/1/2006) will be evaluated below.

60.7 - NOTIFICATION AND RECORD KEEPING

Applicable Requirements:

- (a) Any owner or operator subject to the provisions of this part shall furnish the Administrator [District] written notification or, if acceptable to both the Administrator [District] and the owner or operator of a source, electronic notification, as follows: (1) A notification of the date construction of an affected facility is commenced postmarked no later than 30 days after such date; (3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date; (4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart of in section 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change; (5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with section 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.
- (b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup,

shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring systems performance report and/or summary report form to the Administrator [District] semi-annually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator [District], on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the following: (1) The magnitude of excess emissions computed in accordance with section 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period; (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted; (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments; (4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

Compliance Evaluation:

The ATC will require the facility to notify the District of the date that the construction commences and the date that the unit is initially fired through the Permit Notification Card (aka Permit to Operate application). The PTO, not the ATC, will contain a condition specifying that the facility shall inform the District of any changes to the unit that would affect the operation of the unit, potential emissions, and/or operation of control equipment. The ATC will require the facility to maintain records of unit startup, shutdown, or malfunctions, any malfunction of the control equipment, and periods during which the CEMS is inoperative. The ATC will also require excess emission reports that contain the information required by paragraph (c).

60.8 - PERFORMANCE TESTS

Applicable Requirements:

- (a) Performance test(s) shall be performed within 60 days after achieving the maximum production rate, but not later than 180 days.
- (b) Performance test shall be conducted and data reduced in accordance with EPA test methods.
- (c) Performance test shall be conducted under such conditions as to be representative of normal unit operation.
- (d) The owner or operator shall provide the Administrator [District] at least 30 days prior notice of any performance test.
- (e) The owner or operator shall provide: (1) sampling ports adequate for test methods; (2) safe sampling platform(s); (3) safe access to sampling and test equipment.
- (f) Each performance test shall consist of three separate runs using the applicable test method, unless otherwise noted in 40 CFR Part 60.

Compliance Evaluation:

Initial performance tests have been completed. No initial testing is required as part of this modification.

60.13 - MONITORING REQUIREMENTS

Applicable Requirements:

- (a) All continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specification for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to this part.
- (b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under section 60.8.
- (c) The owner or operator of an affected facility shall conduct a performance evaluation of the CEMS during any performance test required under 60.8 or within 30 days thereafter in accordance with the applicable performance specification in appendix B of this part. The owner or operator of an affected facility shall conduct CEMS performance evaluations at such other times as may be required by the Administrator [District].
- (d) Owners and operators of a CEMS installed in accordance with the provisions of this part, must automatically check the zero and span calibration drifts at least once daily in accordance with a written procedure.
- (e)(2) All continuous monitoring systems shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- (f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained.
- (h) For continuous monitoring systems, 1-hour averages shall be computed from four or more points equally spaced over each 1-hour

period. Data recorded during periods of continuous system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.

Compliance Evaluation:

A CEMS system is installed, evaluated, and operated as specified in 40 CFR Part 60.13.

40 CFR Part 60, Subpart Db - New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units

This regulation pertains to all steam generating units that have a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million BTU/hour). The proposed unit's maximum heat input capacity is 180 MMBtu/hr and is, therefore, subject to the requirements of this NSPS.

The District is currently delegated for this NSPS subpart and, therefore, the requirements of the subpart (revision 7/1/2006) will be evaluated below.

60.42b - STANDARD FOR SULFUR DIOXIDE

Applicable Requirements:

(k) No owner or operator of an affected facility that commences construction or re-construction after February 28, 2005, and that combust coal, oil, gas, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential sulfur dioxide emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input, except as provided in paragraphs (k)(1) or (k)(2).

(k)(1) Units firing only oil that contains no more than 0.3 weight percent sulfur or any individual fuel with a potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from all other sulfur dioxide emission limits in this paragraph.

Compliance Evaluation:

The unit is expected to be in compliance with the above requirement, when operating on natural gas, with a SOx emission rate of 0.0006 lb/MMBtu (0.6 lb/MMScf * 1 MMScf / 1,000 MMBtu). When operating on ultra low sulfur diesel (during periods when natural gas is unavailable), the unit is expected to be in compliance with the above requirement, as well, with a SOx emission rate of 0.0017 lb/MMBtu, as shown below:

$$0.24 \text{ lb SOx} / 1,000 \text{ gal.} / 140,000 \text{ Btu/gal} * 1,000,000 \text{ Btu} / 1 \text{ MMBtu} = 0.0017 \text{ lb SOx} / \text{MMBtu}$$

In addition, ultra low sulfur diesel has a sulfur content of 0.0015% by weight, which is well below the SOx emission limit exemption of 0.3% sulfur content by weight. Per paragraph (k)(1), the unit is not subject to the sulfur dioxide emission limits of the paragraph and there are no other SOx emission limits applicable to the unit listed in this section. The ATC will contain SOx emission limits per District Rule 3.4.

60.43b - STANDARD FOR PARTICULATE MATTER:

Applicable Requirements:

(h)(1) No owner or operator of an affected facility that commences construction, re-construction, or modification after February 28, 2005, and that combusts coal, oil, gas, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter emissions in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (h)(2), (h)(3), (h)(4), and (h)(5).

(h)(5) No owner or operator of an affected facility that commences construction, re-construction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.3 weight percent sulfur or other liquid or gaseous fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less is not subject to the PM or opacity limits in this section.

Compliance Evaluation:

When operating on natural gas, the unit's TSP/PM10 emission rate is 0.006 lb/MMBtu (6.0 lb/MMScf * 1 MMScf / 1,000 MMBtu) and SOx emission rate is 0.0006 lb/MMBtu. When operating on ultra low sulfur diesel, the unit's SOx emission rate is 0.0017 lb/MMBtu. In addition, ultra low sulfur diesel has a sulfur content of 0.0015% by weight. Per paragraph (h)(5), the unit is not subject to the PM or opacity limits of this section. The ATC will contain PM10 and SOx emission limits per District Rule 3.4.

60.44b - STANDARD FOR NITROGEN OXIDES:

Applicable Requirements:

(l) No owner or operator of an affected facility which commenced construction or re-construction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO₂) in excess of the following limits:

(l)(1) If the affected facility combusts coal, oil, or natural gas, or a mixture of these fuels, or with any other fuels: A limit of 86 ng/J (0.20 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas.

Compliance Evaluation:

The unit does not have an annual capacity factor for coal, oil and natural gas of 10% or less and, therefore, is subject to the NO_x emission limit specified in paragraph (l)(1). The unit is in compliance with the specified NO_x emission limit, as shown below:

Natural Gas (9 ppmv 3-hr average): 0.01092 lb/MMBtu (see above emission factors)

Fuel Oil #2 (Ultra Low Sulfur Diesel): 13 ppmv * 46 lb NO₂/mole * 0.554 lb/mole / 19,100 Btu/lb = 0.01735 lb/MMBtu

The ATC will contain NO_x emission and exhaust concentrations limits per District Rule 3.4.

60.45b - COMPLIANCE AND PERFORMANCE TEST METHODS AND PROCEDURES FOR SULFUR DIOXIDE:

Applicable Requirements:

(k) Units that burn only oil that contains no more than 0.3 weight percent sulfur or fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less may demonstrate compliance by maintaining records of fuel supplier certifications of sulfur content of the fuels burned.

Compliance Evaluation:

As calculated above, when operating on natural gas, the unit's SO_x emission rate is 0.0006 lb/MMBtu. Also, when operating on ultra low sulfur diesel, the unit's SO_x emission rate is 0.0017 lb/MMBtu and the fuel's sulfur content is 0.0015% by weight. The ATC will prohibit the combustion of any fuel other than PUC grade natural gas and Ultra Low Sulfur Diesel (aka CARB Diesel) in the unit. The sulfur content of PUC grade natural gas and Ultra Low Sulfur Diesel are each below 0.3% by weight. In addition, the ATC will require the facility to maintain fuel purchase records to demonstrate that only Ultra Low Sulfur Diesel is combusted in the unit during natural gas curtailment operation.

60.46b - COMPLIANCE AND PERFORMANCE TEST METHODS AND PROCEDURES FOR PARTICULATE MATTER AND NITROGEN OXIDES:

Applicable Requirements:

(e) To determine compliance with the emission limits for nitrogen oxides required under 60.44b, the owner or operator of an affected facility shall conduct the performance test as required under 60.8 using the continuous system for monitoring nitrogen oxides under 60.48b(b).

(e)(1) For the initial compliance test, nitrogen oxides from the steam generating unit are monitored for 30 successive system generating unit operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standards under 60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(e)(4) The owner or operator of an affected facility which has a heat input capacity of 73 MW (250 MMBTU/hr) or less and which combust natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the nitrogen oxides standards under 60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, nitrogen oxides emissions data collected pursuant to 60.48b(g)(1) or 60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the nitrogen oxides emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

(i) Units burning only oil that contains no more than 0.3 weight percent sulfur or liquid or gaseous fuels with a potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less may demonstrate compliance [with particulate matter emission limitations] by maintaining fuel supplier certifications of the sulfur content of the fuels burned.

Compliance Evaluation:

NOx Requirements - The unit has been proposed with a continuous emissions monitoring system (CEMS) for NOx. The ATC will require an initial source test and CEMS relative accuracy test audit (RATA). In addition, after the initial source test and CEMS RATA, the facility will be required to complete the initial NOx emission limit compliance test as specified in paragraph (e)(1) and submit results of the initial compliance test to the District. The District will not require on-going 30- performance tests - as given the option in paragraph (e)(4). Instead, the ATC will require annual source testing and CEMS RATA for on-going demonstration of emissions limitation compliance, including NOx.

PM Requirements - As calculated above, when operating on natural gas, the unit's SOx emission rate is 0.0006 lb/MMBtu. Also, when operating on ultra low sulfur diesel, the unit's SOx emission rate is 0.0017 lb/MMBtu and the fuel's sulfur content is 0.0015% by weight. The ATC will prohibit the combustion of any fuel other than PUC grade natural gas and Ultra Low Sulfur Diesel (aka CARB Diesel) in the unit. The sulfur content of PUC grade natural gas and Ultra Low Sulfur Diesel are each below 0.3% by weight. In addition, the ATC will require the facility to maintain fuel purchase records to demonstrate that only Ultra Low Sulfur Diesel is combusted in the unit during natural gas curtailment operation.

60.47b - EMISSION MONITORING FOR SULFUR DIOXIDE:

Applicable Requirements:

(g) Units burning any fuel with a potential sulfur dioxide emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are not required to conduct [SOx] emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

Compliance Evaluation:

As calculated above, when operating on natural gas, the unit's SOx emission rate is 0.0006 lb/MMBtu. Also, when operating on ultra low sulfur diesel, the unit's SOx emission rate is 0.0017 lb/MMBtu and the fuel's sulfur content is 0.0015% by weight. The ATC will prohibit the combustion of any fuel other than PUC grade natural gas and Ultra Low Sulfur Diesel (aka CARB Diesel) in the unit. The sulfur content of PUC grade natural gas and Ultra Low Sulfur Diesel are each below 0.3% by weight. In addition, the ATC will require the facility to maintain fuel purchase records to demonstrate that only Ultra Low Sulfur Diesel is combusted in the unit during periods when natural gas is unavailable.

60.48b - EMISSION MONITORING FOR PARTICULATE MATTER AND NITROGEN OXIDES:

Applicable Requirements:

- (b) The owner or operator of an affected facility subject to a nitrogen oxides standard under 60.44b shall comply with either paragraphs (b)(1) or (b)(2).
- (b)(1) Install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere.
- (c) The continuous monitoring systems required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
- (d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by paragraph (b) of this section and required under 60.13 shall be expressed in ng/J or lb/million BTU heat input and shall be used to calculate the average emission rates under 60.44b. The 1-hour averages shall be calculated using the data points required under 60.13(h)(2).
- (e) The procedures under 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.
- (e)(2) For affected facilities combusting coal, oil, or natural gas, the span value for nitrogen oxides is determined as follows: (1) Natural gas = 500 PPM; and (2) Oil = 500 PPM.
- (f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.
- (j) Units that burn only oil that contain no more the 0.3 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 140 ng/J (0.32 lb/MMBtu) heat input or less are not required to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

Compliance Evaluation:

NOx Requirements - The unit is proposed with a CEMS for monitoring NOx emissions. The ATC will require that the CEMS measure emissions in units of lb/MMBtu. In addition, the ATC will require that the CEMS be installed, evaluated, and operated as specified in 40 CFR 60.13 and comply with the requirements of 40 CFR 60, Appendices B and F. The ATC will specify a CEMS span value for NOx of 500 PPM, or an alternative span value as approved by the District. The ATC will also require the use of a standby monitoring system when the CEMS is inoperative due to breakdown, repairs, calibration checks, and zero and span adjustments if the down-time exceeds those specified in

paragraph (f).

PM Requirements - As calculated above, when operating on natural gas, the unit's SOx emission rate is 0.0006 lb/MMBtu. Also, when operating on ultra low sulfur diesel, the unit's SOx emission rate is 0.0017 lb/MMBtu and the fuel's sulfur content is 0.0015% by weight. The ATC will prohibit the combustion of any fuel other than PUC grade natural gas and Ultra Low Sulfur Diesel (aka CARB Diesel) in the unit. The sulfur content of PUC grade natural gas and Ultra Low Sulfur Diesel are each below 0.3% by weight. In addition, the ATC will require the facility to maintain fuel purchase records to demonstrate that only Ultra Low Sulfur Diesel is combusted in the unit during periods when natural gas is unavailable.

60.49b - REPORTING AND RECORDKEEPING REQUIREMENTS:

- (a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by 60.7. This notification shall include: (1) the design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility; (2) A copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels; and (3) the annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired.
- (b) The owner or operator of each affected facility subject to the sulfur dioxide, particulate matter, and/or nitrogen oxides emission limits under 60.42b, 60.43b, and 60.44b shall submit to the District the performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B.
- (d) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.
- (g) The owner or operator of an affected facility subject to the nitrogen oxides standards under 60.44b shall maintain records of the following information for each steam generating unit operating day: (1) Calendar date; (2) The average hourly nitrogen oxides emission rates (lb/MMBtu) measured; (3) The 30-day average nitrogen oxides emission rates (lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days; (4) Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken; (5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken; (6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data; (7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted; (8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; (9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3; (10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.
- (h) The owner or operator shall submit excess emission reports for any excess emissions which occurred during the reporting period.
- (i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under 60.48b shall submit reports containing the information recorded under 60.49b(g).
- (o) All records required under this section (60.49b) shall be maintained by the owner or operator for a period of two (2) years following the date of such record.

Compliance Evaluation:

The facility will be required to notify the District of the date of the unit's initial start-up. All other reporting requirements of paragraph (a) have been fulfilled within the ATC application. The ATC will require that the results of the initial source test and CEMS RATA be submitted to the District for review. The ATC will also require that the facility record the unit's fuel throughput and calculate the annual capacity factor as required by paragraph (d). The record-keeping parameters of paragraph (g) will also be required by the ATC. Excess emission reports per paragraph (h) will be required to be submitted quarterly. The record-keeping of paragraph (g) will be required to be submitted to the District per paragraph (i). The section does not specify a reporting period, but the ATC will require record-keeping under paragraph (g) be submitted annually. All records will be required to be retained for a minimum of five (5) years per District Rule 3.8 - since the facility has a federal operating permit.

40 CFR Part 64-Continuous Assurance Monitoring (CAM)

This regulation pertains to all stationary sources that satisfy the following (on a per pollutant basis): 1) are subject to an emission limitation or standard, 2) use a control device to achieve compliance with the emission limits or standards, and 3) have pre-control device emissions that

are equal to or greater than the major source limits.

Each criteria pollutant is subject to an emission limitation on the ATC. However, only VOC, CO, and NOx have been proposed to be controlled by emissions control equipment. Below, uncontrolled emissions from the unit operating on natural gas are calculated for VOC, CO, and NOx. The uncontrolled emission factors are from AP-42, Table 1.4-1 & 1.4-2, 7/1998.

Uncontrolled VOC Emissions = 5.5 lb/MMScf * 1576.8 MMScf/year * 1 ton / 2000 lb = 4.34 tons/year

Uncontrolled CO Emissions = 84 lb/MMScf * 1576.8 MMScf/year * 1 ton / 2000 lb = 66.23 tons/year

Uncontrolled NOx Emissions = 280 lb/MMScf * 1576.8 MMScf/year * 1 ton / 2000 lb = 220.75 tons/year

Uncontrolled emissions from the unit operating on ultra low sulfur diesel are calculated below for VOC, CO and NOx, as well. The uncontrolled emission factors for CO and NOx are from AP-42, Table 1.3-1, 9/1998. The uncontrolled emission factor for VOC is based on the applicants estimated oxidation catalyst control efficiency of 50%. Thus, the uncontrolled emission factor is double the controlled emission factor calculated earlier in this evaluation of 0.78 lb/1,000 gallons.

Uncontrolled VOC Emissions = 1.56 lb / 1,000 gallons * 513,792 gallons/year * 1 ton / 2,000 lb = 0.40 tons/year

Uncontrolled CO Emissions = 5 lb / 1,000 gallons * 513,792 gallons/year * 1 ton / 2,000 lb = 1.28 tons/year

Uncontrolled NOx Emissions = 24 lb / 1,000 gallons * 513,792 gallons/year * 1 ton / 2,000 lb = 6.17 tons/year

The CAM requirements are applicable to the monitoring of NOx emissions, since 1) the unit will be subject to the NOx emission limits of the ATC, 2) the unit is equipped with SCR, which is required to achieve the NOx emission limits of the ATC, and 3) the unit's pre-control device PTE is above the District's major source threshold limit for NOx.

Per section 64.3(d), the general design criteria of the Part is satisfied with the proposed CEMS for monitoring NOx emissions. The ATC and the facility's Title V Permit will require that the source use the CEMS to monitor NOx emissions and that a Relative Accuracy Test Audit (RATA) on the CEMS be performed initially and at least once every twelve (12) months. The RATA will be performed in accordance with 40 CFR Part 60 Appendix B (PERFORMANCE SPECIFICATIONS). A written quality assurance (QA) program shall be established in accordance with 40 CFR Part 60 Appendix F. In addition, the ATC will require that the facility submit a compliance assurance monitoring plan and comply with the compliance assurance monitoring operation and maintenance requirements of section 64.7 and the record-keeping and reporting requirements of section 64.9.

District Risk Management Plan and Risk Assessment Guidelines (RMPRAG)

Because this project is concurrent with C-13-42, and C-13-72 the combined risk will be evaluated. As required by the District's RMPRAG Policy, the project's health risk will be reviewed. The review will evaluate the Hazardous Air Pollutant (HAP) emissions, and because the engine being permitted under C-13-42 will be installed after March 3, 2004, the risk from diesel particulate will also be quantified.

C-13-42: Emergency IC engine

1. HAP Emissions - Excluding Diesel Particulate:

Pollutants	Emission Factor * (lb/MMBtu)	Emissions (lb/year)	Screening Level (lb/year)	Less Than Screening
Benzene	9.33E-04	0.39	6.70	Yes
Toluene	4.09E-04	0.17	38,600.00	Yes
Xylenes	2.85E-04	0.12	57,900.00	Yes
Propylene	2.58E-03	1.09	52.00	Yes
1,3-Butadiene	3.91E-05	0.02	1.10	Yes
Formaldehyde	1.18E-03	0.50	33.00	Yes
Acetaldehyde	7.67E-04	0.32	72.00	Yes
Acrolein	9.25E-05	0.04	3.90	Yes
Benz[a]anthracene	1.68E-06	0.00	0.04	Yes
Benzo[b]fluoranthene	9.91E-08	0.00	0.04	Yes
Benzo[a]pyrene	1.55E-07	0.00	0.04	Yes
Dibenz[a,h]anthracene	5.83E-07	0.00	0.04	Yes

Indeno[1,2,3-cd]pyrene	3.57E-07	0.00	0.04	Yes
Naphthalene	8.48E-05	0.04	270.00	Yes

* Based on AP-42, Table 3.3-2 (10/96).

Since the emissions from the above HAPs are below the screening levels, no further toxic review is required of them.

2. Diesel Particulate Cancer Risk Calculation:

<u>Dispersion Data</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Residential Emission Concentration, X/Q =	582.3 $\mu\text{g}/\text{m}^3$	CR	Screen3
Worksite Emission Concentration, X/Q =	582.3 $\mu\text{g}/\text{m}^3$	CW	Screen3

* Conservatively, the District will use the unit's maximum dispersion concentration to evaluate both the residential and worksite receptor risks. As documented, the maximum concentration occurs at 43 meters from the source.

<u>Individual Cancer Risk (ICR)</u>	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Diesel Particulate Unit Risk Factor =	3E-04 (unit-less)	UR	OEHHA
Dispersion Annualizing Factor *=	0.10 (unit-less)	AF	District
Residential, ICR =	0.000 in a million	ICR	ER*UR*CR*AF
Worksite, ICR =	0.000 in a million	ICW	(46/70)*ER*UR*CW*AF
Maximum, ICR =	0.000 in a million	Max Risk	Max (ICR, ICW)

* The Screen3 dispersion concentration for both the residential and the worksite receptors are annualized by a factor of 0.10.

3. Evaluation of Best Available Control Technology for Toxic Air Contaminants* (T-BACT):

Is T-BACT Required (Max Risk > 1 in a million):	No
Has T-BACT been proposed for the project:	yes
Based on the T-BACT proposal and the maximum ICR value calculated, the project is:	Approvable

* Effective March 3, 2004, the District determined that T-BACT for a diesel fired emergency engine is either: 1) the engine manufacturer's PM10 emission certification equal to or less than 0.15 gr/hp-hr; or 2) the use of a particulate control device (e.g. Diesel Particulate Filter (DPF), etc.) to reduce an engine's particulate matter exhaust emissions to or less than 0.15 g/bhp-hr

As proposed the project meets the requirements of the District's RMPRAG Policy, therefore no further toxics review is required.

C-13-72: 3.9 MMBTU/hr boiler

Natural Gas Combustion	Emission Factor* lb/MMScf	Yearly Emissions		Screening Level (lb/year)	Less Than Screening
		(lb/year)	(g/s)		
Arsenic	2.0E-04	0.0031	4.46E-08	0.024	Yes
Benz[a]anthracene	1.8E-06	0.0000	4.02E-10	0.04	Yes
Benzene	2.1E-03	0.0326	4.69E-07	6.70	Yes
Benzo[a]pyrene	1.2E-06	0.0000	2.68E-10	0.04	Yes
Benzo[b]fluoranthene	1.8E-06	0.0000	4.02E-10	0.04	Yes
Benzo[k]fluoranthene	1.8E-06	0.0000	4.02E-10	0.04	Yes
Dibenz[a,h]anthracene	1.2E-06	0.0000	2.68E-10	0.04	Yes
Beryllium	1.2E-05	0.0002	2.68E-09	0.015	Yes
Cadmium	1.1E-03	0.0171	2.46E-07	0.046	Yes
Copper	8.5E-04	0.0132	1.90E-07	463.0	Yes
Dichlorobenzene	1.2E-03	0.0186	2.68E-07	68.0	Yes
Formaldehyde	7.5E-02	1.1640	1.67E-05	33.0	Yes
Lead	5.0E-04	0.0078	1.12E-07	29.00	Yes
Manganese	3.8E-04	0.0059	8.48E-08	77.0	Yes
Mercury	2.6E-04	0.0040	5.80E-08	57.9	Yes
n-Hexane	1.8E+00	27.9360	4.02E-04	83,000	Yes
Naphthalene	6.1E-04	0.0095	1.36E-07	270.0	Yes
Nickel	2.1E-03	0.0326	4.69E-07	0.73	Yes
Selenium	2.4E-05	0.0004	5.36E-09	96.5	Yes
Toluene	3.4E-03	0.0528	7.59E-07	38,600	Yes
Zinc	2.9E-02	0.4501	6.47E-06	6,760	Yes

* AP-42, Section 1.4 (7/98)

Since the emissions from the above HAPs are below the screening levels, no further toxic review is required of them.

C-13-75: 180 MMBTU/hr boiler modification

- This modification does not result in an increase in natural gas or diesel throughput, therefore, it is expected that there is no increase in HAP emissions. No further toxics review is required.

Combined project

Compounds	C-13-42	C-13-72	Total	Screening Level	Less Than Screening
	lb/year	lb/year	(lb/year)	(lb/year)	
1,3-Butadiene	0.0200	0.0000	0.0200	1.10	Yes
Acetaldehyde	0.3200	0.0000	0.3200	72	Yes
Acrolein	0.0390	0.0000	0.0390	3.9	Yes
Arsenic	0.0000	0.0031	0.0031	0.024	Yes
Benz[a]anthracene	0.0000	0.0000	0.0000	0.04	Yes
Benzene	0.3900	0.0326	0.4226	6.70	Yes
Benzo[a]pyrene	0.0000	0.0000	0.0000	0.04	Yes
Benzo[b]fluoranthene	0.0000	0.0000	0.0000	0.04	Yes
Benzo[k]fluoranthene	0.0000	0.0000	0.0000	0.04	Yes
Dibenz[a,h]anthracene	0.0000	0.0000	0.0000	0.04	Yes
Beryllium	0.0000	0.0002	0.0002	0.015	Yes
Cadmium	0.0000	0.0171	0.0171	0.046	Yes
Copper	0.0000	0.0132	0.0132	463.0	Yes
Dichlorobenzene	0.0000	0.0186	0.0186	68.0	Yes
Formaldehyde	0.5000	1.1640	1.6640	33.0	Yes
Lead	0.0000	0.0078	0.0078	29.00	Yes
Manganese	0.0000	0.0059	0.0059	77.0	Yes
Mercury	0.0000	0.0040	0.0040	57.9	Yes
n-Hexane	0.0000	27.9360	27.9360	83,000	Yes
Naphthalene	0.0400	0.0095	0.0495	270.0	Yes
Nickel	0.0000	0.0326	0.0326	0.73	Yes
Propylene	1.0900	0.0000	1.0900	52.00	Yes
Selenium	0.0000	0.0004	0.0004	96.5	Yes
Toluene	0.1700	0.0528	0.2228	38,600	Yes
Xylenes	0.1200	0.0000	0.1200	57,900	Yes
Zinc	0.0000	0.4501	0.4501	6,760	Yes

The combined projects do not require further toxics review.

COMMENTS:

BACT, TBACT, and offsets are not triggered. This is not considered a major modification.

Copies of the ATC, Title V Statement of Basis Addendum/Evaluation, and proposed Title V permit changes will be mailed to the California Air Resources Board (ARB) and the United States Environmental Protection Agency (US EPA) Region IX.

RECOMMENDATIONS:

Perform the required public and regulatory notice.

Engineer: _____

Date: 8/28/13

Reviewed by: Frank Terrain

Date: 8/29/2013

generic.xls 12/14/2004 pah

NSR Version 8/13/03

PTO's

Process Description	Current Permits	VOC Emissions					CO Emissions					NOx Emissions					SOx Emissions					PM10 Emissions				
		QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	QTR 4 (lbs)	Annual (TPV)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	QTR 4 (lbs)	Annual (TPV)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	QTR 4 (lbs)	Annual (TPV)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	QTR 4 (lbs)	Annual (TPV)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	QTR 4 (lbs)	Annual (TPV)
Gasoline Storage & Dispensing	P-1-81(a3)	475	475	475	475	0.95	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
Cooling Towers	P-101-02	0	0	0	0	0.00	0	0	0	0	0.00	53	53	54	54	0.11	1	1	1	1	0.00	7	7	8	8	0.01
Boiler, NG Fired	P-101-03	5	5	5	5	0.01	26	29	29	29	0.06	902	912	922	922	1.82	47	47	48	48	0.06	0	0	0	0	0.00
Landfill Gas Collection & SVE	P-14-98	6,098	6,157	6,225	6,225	12.31	902	912	922	922	1.82	907	917	927	927	1.83	47	47	48	48	0.06	0	0	0	0	0.00
Boiler (2.1 MMbtu/hr)	P-16-08	25	25	26	26	0.05	90	91	92	92	0.18	112	113	115	115	0.27	3	3	3	3	0.01	34	35	35	35	0.07
Wastewater Treatment Plant (WWTP)	P-22-00(a)	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
Boiler, NG Fired	P-28-03	124	63	84	127	0.19	466	256	238	477	0.71	511	259	261	522	0.78	3	1	1	3	0.00	32	16	18	33	0.05
Boiler, NG Fired	C-13-72	28	14	14	29	0.04	426	217	219	438	0.85	511	258	251	522	0.78	3	2	2	3	0.00	39	20	20	40	0.06
Boilers (10)	P-3-00	48	44	44	44	0.06	664	672	679	679	1.35	761	600	608	808	1.80	5	5	5	5	0.01	60	61	61	61	0.12
Gasoline Storage & Dispensing	P-42-76(a3)	220	220	220	220	0.44	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
Boilers, NG Fired	P-44-11	11	8	6	11	0.02	99	46	46	99	0.15	48	24	24	46	0.07	1	1	1	1	0.00	15	8	8	15	0.02
Boiler - Steam Generation	P-44-90	33	34	34	34	0.07	145	147	148	148	0.29	691	690	707	707	1.40	5	5	5	5	0.01	83	84	85	85	0.17
Boiler - Steam Generation	P-45-96	14	15	15	15	0.03	62	63	63	63	0.13	207	300	294	304	0.60	2	2	2	2	0.00	36	36	37	37	0.07
Boiler - Steam Generation	P-47-96	39	39	40	40	0.08	170	172	174	174	0.34	810	810	826	826	1.64	5	5	5	5	0.01	97	98	99	99	0.20
Boiler - Steam Generation	P-48-96	13	13	13	13	0.03	54	55	55	55	0.11	259	262	265	265	0.52	2	2	2	2	0.00	32	32	32	32	0.06
Boiler	P-5-00	12	12	12	12	0.02	69	69	69	69	0.14	326	328	328	328	0.66	2	2	2	2	0.00	39	39	39	39	0.08
Boiler - Natural Gas for Steam	P-52-00	24	24	24	24	0.05	150	152	154	154	0.31	602	608	615	615	1.22	3	3	3	3	0.01	39	39	39	39	0.10
Boiler	P-54-00(a)	0	0	0	0	0.00	267	260	263	263	0.56	266	238	241	241	0.49	4	4	4	4	0.01	49	50	50	50	0.10
Woodworking (Silo)	P-54-90(a)	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	34	34	35	35	0.07
Boilers - Natural Gas	P-54-96	17	17	17	17	0.03	68	69	70	71	0.14	324	328	331	331	0.66	2	2	2	2	0.00	40	40	41	41	0.08
Boilers - Natural Gas	P-55-00	13	13	13	13	0.03	68	70	71	71	0.14	320	334	338	338	0.67	2	2	2	2	0.00	40	40	41	41	0.08
Boiler - Steam Generation	P-55-96	23	24	24	24	0.05	101	102	103	103	0.20	480	485	480	490	0.97	3	3	3	3	0.01	58	58	59	59	0.12
Boilers	P-63-06(a)	78	78	79	79	0.16	248	251	254	254	0.50	251	254	256	256	0.51	2	2	2	2	0.00	21	21	21	21	0.04
Boilers	P-64-03(a)	19	19	19	19	0.04	1018	1,027	1,038	1,038	2.06	101	105	107	107	0.21	2	2	2	2	0.00	28	27	27	27	0.05
Boiler, NG Fired	P-65-03	27	27	28	28	0.05	218	221	223	223	0.44	118	121	122	122	0.24	3	3	3	3	0.01	37	38	38	38	0.08
Boilers	P-67-06	26	26	26	26	0.06	453	458	443	443	0.84	516	522	527	527	1.05	3	3	3	3	0.01	36	40	40	40	0.08
Boiler #2	P-67-08	81	82	83	83	0.20	8,262	8,364	8,476	8,476	16.80	1,022	1,033	1,044	1,044	2.10	38	33	38	38	0.10	363	363	367	367	0.80
Incinerator Vent. Lab.	P-81-90(a)	34	34	34	34	0.07	84	84	84	84	0.17	1,053	1,053	1,053	1,053	2.10	3	3	3	3	0.01	87	87	87	87	0.18
Boiler (180 MMbtu/hr)	P-83-06	1,687	1,336	1,704	1,704	3.38	1,517	1,533	1,549	1,549	3.07	2,595	2,591	2,617	2,617	5.20	253	256	259	258	0.51	2,948	2,974	2,900	3,000	5.96
Boiler (180 MMbtu/hr)	C-13-76	1,687	1,688	1,704	1,704	3.38	1,517	1,533	1,549	1,549	3.07	2,595	2,591	2,617	2,617	5.20	253	256	259	258	0.51	2,948	2,974	2,900	3,000	5.96
Gasoline Storage & Dispensing	P-84-03(a1)	3	3	3	3	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00
Boiler	P-89-00	154	158	158	158	0.31	8,340	8,473	8,595	8,595	16.86	1,384	1,396	1,407	1,407	2.26	261	261	261	261	0.16	242	244	248	248	0.45
Boiler #1	P-90-00	558	593	597	597	0.86	81,719	82,613	83,506	83,506	163.74	13,597	13,697	13,807	13,807	21.03	2,001	2,003	2,005	2,005	1.55	1,721	1,730	1,739	1,739	2.11
Boiler, NG Fired	P-90-02	11	12	12	12	0.02	199	202	204	204	0.40	98	99	100	100	0.20	2	2	2	2	0.00	21	21	21	21	0.04
Boiler #2	P-91-00	558	593	597	597	0.86	81,719	82,613	83,506	83,506	163.74	13,597	13,697	13,807	13,807	21.03	2,001	2,003	2,005	2,005	1.55	1,721	1,730	1,739	1,739	2.11
Boiler, NG Fired	P-91-02	11	12	12	12	0.02	199	202	204	204	0.40	98	99	100	100	0.20	2	2	2	2	0.00	21	21	21	21	0.04
Woodworking (Physical Plant)	P-95-90(a1)	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	407	412	418	418	0.83
Boiler #3	P-96-00	1,077	1,069	1,101	1,101	2.18	20,365	20,418	20,351	20,351	27.40	9,973	10,532	10,131	10,131	15.83	1,653	1,899	1,990	1,990	1.02	1,992	2,009	2,023	2,025	3.26
Paint Booth	P-96-00(a1)	1,715	1,715	1,715	1,715	3.37	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	54	54	54	54	0.11
Woodworking (art building)	C-13-84	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0.00	1,215	1,229	1,242	1,242	2.46
Pre-project SSPE (lb/year)		82,520																								
Post-project SSPE (lb/year)		53,226																								
Pre-project Policy 28 PTE		13,315	13,367	13,460	13,548	26.28	207,733	209,638	211,813	212,103	404.11	51,157	51,306	51,734	52,020	87.24	7,548	7,554	7,562	7,564	5.08	10,565	10,626	10,707	10,731	17.81
Post-project Policy 28 PTE		13,319	13,318	13,330	13,450	26.11	207,690	209,617	211,794	212,064	404.05	51,157	51,306	51,734	52,020	87.24	7,548	7,555	7,563	7,564	5.08	11,767	11,859	11,953	11,980	20.28
Emergency IC Engine (440 BHP)		2	2	2	2	0.00	163	163	163	163	0.69	1,275	1,275	1,275	1,275	0.64	36	36	36	36	0.02	62	62	62	62	0.03
Emergency IC Engine (560 BHP)		282	282	282	282	0.14	748	748	748	748	0.37	3,472	3,472	3,472	3,472	1.74	45	45	45	45	0.02	246	246	246	246	0.12
Emergency IC Engine (750 BHP)		119	119	119	119	0.06	417	417	417	417	0.21	3,767	3,767	3,767	3,767	1.93	61	61	61	61	0.03	40	40	40	40	0.02
Emergency IC Engine (1,200 BHP)		108	108	108	108	0.05	179	179	179	179	0.09	3,508	3,508	3,508	3,508	1.75	97	97	97	97	0.03	25	25	25	25	0.01
Emergency IC Engine (643 BHP)		94	94	94	94	0.05	680	680	680	680	0.34	3,068	3,068	3,068	3,068	1.54	52	52	52	52	0.03	283	283	283	283	0.14
Emergency IC Engine (228 BHP)		115	115	115	115	0.06	305	305	305	305	0.15	1,514	1,514	1,514	1,514	0.71	18	18	18	18	0.01	100	100	100	100	0.05
Emergency IC Engine (227 BHP)		17	17	17	17	0.01	517	517	517	517	0.08	636	636	636	636	0.32	18	18	18	18	0.01	25	25	25	25	0.01
Emergency IC Engine (68 BHP)		34	34	34	34	0.02	91	91	91	91	0.05	207	207	207	207	0.10	6	6	6	6	0.00	30	30	30	30	0.01

P-108-95(a)	Emergency IC Engine (834 BHP)	25	25	25	0.01	3,132	3,132	3,132	3,132	1,57	1,861	1,861	1,861	0.93	0	0	0	0	0	0.00	8	8	8	8	0.00
P-109-01	Emergency IC Engine (68 BHP)	34	34	34	0.02	691	691	691	691	0.05	207	207	207	0.10	6	6	6	6	6	0.00	30	30	30	30	0.01
P-109-95(a)	Emergency IC Engine (111 BHP)	5	5	5	0.00	662	662	662	662	0.33	363	363	363	0.60	0	0	0	0	0	0.00	2	2	2	2	0.00
P-110-95(a)	Emergency IC Engine (400 BHP)	16	16	16	0.04	2,016	2,016	2,016	2,016	1.01	1,166	1,166	1,166	0.60	0	0	0	0	0	0.00	5	5	5	5	0.00
P-111-01	Emergency IC Engine (1,135 BHP)	70	70	70	0.04	2,500	2,500	2,500	2,500	0.13	2,652	2,652	2,652	1.33	92	92	92	92	92	0.05	60	60	60	60	0.03
P-112-95(a)	Emergency IC Engine (52 BHP)	2	2	2	0.00	284	284	284	284	0.15	175	175	175	0.09	0	0	0	0	0	0.00	1	1	1	1	0.00
P-113-95(a)	Emergency IC Engine (124 BHP)	3	3	3	0.00	363	363	363	363	0.19	228	228	228	0.11	0	0	0	0	0	0.00	1	1	1	1	0.00
P-114-02	Emergency IC Engine (111 BHP)	30	30	30	0.01	100	100	100	100	0.05	450	450	450	0.22	14	14	14	14	14	0.01	24	24	24	24	0.00
P-114-95(a)	Emergency IC Engine (755 BHP)	47	47	47	0.02	995	995	995	995	0.30	354	354	354	0.18	0	0	0	0	0	0.00	2	2	2	2	0.00
P-115-03	Emergency IC Engine (207 BHP)	5	5	5	0.00	100	100	100	100	0.05	450	450	450	0.22	14	14	14	14	14	0.01	24	24	24	24	0.00
P-115-03	Emergency IC Engine (207 BHP)	47	47	47	0.02	133	133	133	133	0.07	1,897	1,897	1,897	0.95	61	61	61	61	61	0.03	27	27	27	27	0.01
P-117-03	Emergency IC Engine (54 BHP)	16	16	16	0.01	408	408	408	408	0.46	446	446	446	0.31	17	17	17	17	17	0.01	81	81	81	81	0.04
P-117-03	Emergency IC Engine (164 BHP)	4	4	4	0.00	446	446	446	446	0.22	285	285	285	0.13	0	0	0	0	0	0.00	1	1	1	1	0.00
P-118-03	Emergency IC Engine (62 BHP)	10	10	10	0.00	88	88	88	88	0.04	1,691	1,691	1,691	0.85	62	62	62	62	62	0.03	8	8	8	8	0.00
P-118-03	Emergency IC Engine (207 BHP)	3	3	3	0.00	383	383	383	383	0.16	228	228	228	0.11	0	0	0	0	0	0.00	1	1	1	1	0.00
P-118-03	Emergency IC Engine (62 BHP)	16	16	16	0.01	306	306	306	306	0.15	628	628	628	0.31	17	17	17	17	17	0.01	81	81	81	81	0.04
P-118-03	Emergency IC Engine (62 BHP)	3	3	3	0.00	435	435	435	435	0.22	259	259	259	0.13	0	0	0	0	0	0.00	3	3	3	3	0.00
P-118-95(a)	Emergency IC Engine (1,120 BHP)	74	74	74	0.04	212	212	212	212	0.11	2,044	2,044	2,044	1.02	91	91	91	91	91	0.05	44	44	44	44	0.02
P-120-03	Emergency IC Engine (2,935 BHP)	324	324	324	0.16	647	647	647	647	0.32	7,765	7,765	7,765	3.63	237	237	237	237	237	0.12	130	130	130	130	0.06
P-120-95(a)	Emergency IC Engine (52 BHP)	2	2	2	0.00	294	294	294	294	0.15	175	175	175	0.09	0	0	0	0	0	0.00	1	1	1	1	0.00
P-121-03	Emergency IC Engine (1,120 BHP)	75	75	75	0.04	212	212	212	212	0.11	2,046	2,046	2,046	1.02	91	91	91	91	91	0.05	45	45	45	45	0.02
P-121-95(a)	Emergency IC Engine (124 BHP)	4	4	4	0.00	363	363	363	363	0.19	228	228	228	0.11	0	0	0	0	0	0.00	1	1	1	1	0.00
P-122-95(a)	Emergency IC Engine (64 BHP)	4	4	4	0.00	450	450	450	450	0.23	267	267	267	0.13	0	0	0	0	0	0.00	3	3	3	3	0.00
P-123-95(a)	Emergency IC Engine (160 BHP)	10	10	10	0.00	1,049	1,049	1,049	1,049	0.52	623	623	623	0.31	0	0	0	0	0	0.00	3	3	3	3	0.00
P-123-95(a)	Emergency IC Engine (160 BHP)	7	7	7	0.00	885	885	885	885	0.44	526	526	526	0.26	0	0	0	0	0	0.00	3	3	3	3	0.00
P-123-95(a)	Emergency IC Engine (380 BHP)	80	80	80	0.04	168	168	168	168	0.08	1,558	1,558	1,558	0.78	31	31	31	31	31	0.02	84	84	84	84	0.04
P-123-95(a)	Emergency IC Engine (380 BHP)	128	128	128	0.06	316	316	316	316	0.16	3,146	3,146	3,146	1.57	91	91	91	91	91	0.05	25	25	25	25	0.01
P-15-04	Emergency IC Engine (1,120 BHP)	84	84	84	0.04	275	275	275	275	0.14	1,558	1,558	1,558	0.78	94	94	94	94	94	0.05	84	84	84	84	0.04
P-16-09	Emergency IC Engine (345 BHP)	53	53	53	0.03	330	330	330	330	0.17	1,756	1,756	1,756	0.83	2	2	2	2	2	0.00	26	26	26	26	0.01
P-16-98	Emergency IC Engine (170 BHP)	47	47	47	0.02	73	73	73	73	0.04	888	888	888	0.44	85	85	85	85	85	0.04	76	76	76	76	0.04
P-17-02	Emergency IC Engine (82 BHP)	6	6	6	0.00	48	48	48	48	0.02	356	356	356	0.18	1	1	1	1	1	0.00	5	5	5	5	0.00
P-17-98	Emergency IC Engine (82 BHP)	40	40	40	0.02	80	80	80	80	0.04	360	360	360	0.18	6	6	6	6	6	0.00	20	20	20	20	0.01
P-18-98	Emergency IC Engine (53 BHP)	20	20	20	0.01	617	617	617	617	0.31	2,002	2,002	2,002	1.00	288	288	288	288	288	0.14	186	186	186	186	0.09
P-2-00	Emergency IC Engine (423 BHP)	2	2	2	0.00	31	31	31	31	0.02	121	121	121	0.06	0	0	0	0	0	0.00	4	4	4	4	0.00
P-200-95(a)	Emergency IC Engine (80 BHP)	64	64	64	0.03	183	183	183	183	0.09	1,004	1,004	1,004	0.50	17	17	17	17	17	0.01	23	23	23	23	0.01
P-20-95(a)	Emergency IC Engine (207 BHP)	196	196	196	0.10	521	521	521	521	0.26	2,418	2,418	2,418	1.21	32	32	32	32	32	0.02	86	86	86	86	0.04
P-20-95(a)	Emergency IC Engine (770 BHP)	340	340	340	0.17	679	679	679	679	0.34	149	149	149	0.07	20	20	20	20	20	0.01	15	15	15	15	0.01
P-31-98	Emergency IC Engine (535 BHP)	73	73	73	0.04	354	354	354	354	0.18	1,233	1,233	1,233	0.66	139	139	139	139	139	0.07	45	45	45	45	0.02
P-32-98	Emergency IC Engine (535 BHP)	64	64	64	0.03	307	307	307	307	0.15	1,150	1,150	1,150	0.58	121	121	121	121	121	0.06	39	39	39	39	0.02
P-32-99	Emergency IC Engine (317 BHP)	73	73	73	0.04	354	354	354	354	0.18	1,322	1,322	1,322	0.68	139	139	139	139	139	0.07	45	45	45	45	0.02
P-38-05	Emergency IC Engine (453.8 BHP)	20	20	20	0.01	66	66	66	66	0.03	512	512	512	0.26	26	26	26	26	26	0.01	20	20	20	20	0.01
P-40-07	Emergency IC Engine (900 BHP)	85	85	85	0.04	171	171	171	171	0.17	1,656	1,656	1,656	0.83	2	2	2	2	2	0.00	55	55	55	55	0.03
P-50-95(a)	Emergency IC Engine (1,480 BHP)	59	59	59	0.05	343	343	343	343	0.19	2,850	2,850	2,850	1.47	4	4	4	4	4	0.00	54	54	54	54	0.03
P-51-07	Emergency IC Engine (64 BHP)	10	10	10	0.01	31	31	31	31	0.02	131	131	131	0.07	0	0	0	0	0	0.00	3	3	3	3	0.00
P-51-95(a)	Emergency IC Engine (118 BHP)	59	59	59	0.03	158	158	158	158	0.08	732	732	732	0.37	10	10	10	10	10	0.00	52	52	52	52	0.03
P-52-07	Emergency IC Engine (1,207 BHP)	213	213	213	0.11	158	158	158	158	0.08	2,714	2,714	2,714	1.36	3	3	3	3	3	0.00	80	80	80	80	0.04
P-52-95(a)	Emergency IC Engine (1,207 BHP)	59	59	59	0.03	158	158	158	158	0.08	2,714	2,714	2,714	1.36	3	3	3	3	3	0.00	80	80	80	80	0.04
P-53-07	Emergency IC Engine (923 BHP)	213	213	213	0.11	158	158	158	158	0.08	2,714	2,714	2,714	1.36	3	3	3	3	3	0.00	80	80	80	80	0.04
P-54-07	Emergency IC Engine (1,252 BHP)	21	21	21	0.01	165	165	165	165	0.08	1,645	1,645	1,645	0.82	2	2	2	2	2	0.00	21	21	21	21	0.01
P-54-07	Emergency IC Engine (1,252 BHP)	73	73	73	0.04	1573	1573	1573	1573	0.79	5,604	5,604	5,604	2.80	871	871	871	871	871	0.44	418	418	418	418	0.21
P-59-05	Emergency IC Engine (145 BHP)	12	12	12	0.01	48	48	48	48	0.02	275	275	275	0.14	12	12	12	12	12	0.01	2	2	2	2	0.00
P-59-07	Emergency IC Engine (364 BHP)	26	26	26	0.01	384	384	384	384	0.19	429	429	429	0.21	1	1	1	1	1	0.00	19	19	19	19	0.01
P-61-100	Emergency IC Engine (360 BHP)	55	55	55	0.03	1366	1366	1366	1366	0.68	79	79	79	0.04	11	11	11	11	11	0.01	8	8	8	8	0.00
P-66-08	Emergency IC Engine (126 BHP)	46	46	46	0.02	106	106	106	106	0.05	150	150	150	0.08	0	0	0	0	0	0.00	8	8	8	8	0.00
P-66-08	Emergency IC Engine (158 BHP)	6	6	6	0.00	89	89	89	89	0.04	165	165	165	0.10	0	0	0	0	0	0.00	10	10	10	10	0.00
P-68-08	Emergency IC Engine (1,558 BHP)	20	20	20	0.01	140	140	140	140	0.07	480	480	480	0.24	1	1	1	1	1	0.00	10	10	10	10	0.00
P-68-08	Emergency IC Engine (904 BHP)	33	33	33	0.02	122	122	122	122	0.06	1,675	1,675	1,675	0.84	2	2	2	2	2	0.00	23	23	23	23	0.01
P-68-95(a)	Emergency IC Engine (168 BHP)	22	22	22	0.01	241	241	241	241	0.12	779														

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

1947 Galileo Court, Suite 103, Davis, CA 95618

New Source Review Last Five Year Activity

Evaluator: Eugene Rubin

SIC Code # 8221

Facility Name: UC Davis

Date of Initial Five Year Determination: 5/22/1998

Date of Previous Five Year Determination: 5/31/2013

Date of Current Five Year Determination: 8/8/2013

Location: UC Davis Main Campus

List of Activities: C-13-84

Equipment	Issued Permits	Date PTO issued	ATC	Date ATC Issued	VOC (tpy)	CO (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
Boilers	P-67-00(a)	4/8/2009	C-08-61	1/8/2009	0.06	0.88	1.05	0.01	0.08
GDF	P-84-93(a1)	4/8/2009	C-08-97	1/8/2009	0.00	0.00	0.00	0.00	0.00
Emergency ICE	P-2-09	4/2/2010	C-08-110	1/8/2009	0.00	0.02	0.06	0.00	0.00
Emergency ICE	P-3-09	6/18/2009	C-08-193	1/8/2009	0.17	0.34	0.07	0.01	0.01
Emergency ICE	P-4-09	4/2/2010	C-08-232(rev)	1/8/2009	0.01	0.07	0.22	0.00	0.01
Emergency ICE	P-16-09	4/2/2010	C-08-254	5/1/2009	0.03	0.17	0.88	0.00	0.01
Emergency ICE	P-17-09	3/17/2010	C-09-16	5/1/2009	0.00	0.02	0.18	0.00	0.00
GDF	P-42-76(a2)	4/1/2010	C-09-57	3/5/2009	0.44	0.00	0.00	0.00	0.00
Emergency ICE	P-66-09	5/24/2010	C-09-127	9/18/2009	0.00	0.04	0.08	0.00	0.00
Emergency ICE	P-67-09	5/24/2010	C-09-128	9/18/2009	0.00	0.05	0.10	0.00	0.00
Emergency ICE	P-68-09	5/24/2010	C-09-129	9/18/2009	0.01	0.07	0.24	0.00	0.01
Emergency ICE	P-54-09	4/2/2010	C-09-139	9/18/2009	0.01	0.08	0.82	0.00	0.01
Emergency ICE	P-69-09	9/9/2010	C-09-161	9/18/2009	0.02	0.06	0.84	0.00	0.01
Boilers	P-63-06(a)	9/24/2010	C-09-210	6/3/2010	0.16	0.50	0.51	0.00	0.04
Emergency ICE	P-42-10	4/20/2011	C-10-17	9/8/2010	0.00	0.03	0.18	0.00	0.00
Emergency ICE	P-43-10	6/1/2011	C-10-38	9/8/2010	0.00	0.02	0.00	0.00	0.00
Emergency ICE	P-44-10	4/20/2011	C-10-45	9/8/2010	0.04	0.18	0.87	0.00	0.03
Emergency ICE	P-7-11	8/2/2011	C-10-105	3/25/2011	0.01	0.08	0.35	0.00	0.01
Boiler	P-54-00(a)	8/9/2011	C-10-93	3/25/2011	0.07	0.58	0.48	0.01	0.10
Boiler	P-44-11	1/9/2012	C-11-62	8/23/2011	0.02	0.15	0.07	0.00	0.02
GDF	P-1-81(a3)	5/1/2012	C-11-80	3/5/2012	0.95	0.00	0.00	0.00	0.00
Emergency ICE	P-72-11	9/27/2012	C-11-89	3/5/2012	0.03	0.31	1.08	0.00	0.03
Emergency ICE	(P-39-12)	-	C-12-89	12/10/2012	0.02	0.11	0.30	0.00	0.02
Emergency ICE	(P-51-12)	-	C-12-125	2/26/2013	0.04	0.06	0.41	0.00	0.00
Emergency ICE	(P-52-12)	-	C-12-126	2/26/2013	0.00	0.05	0.10	0.00	0.00
Emergency ICE	(P-55-12)	-	C-12-129	2/26/2013	0.01	0.05	0.28	0.00	0.01
Emergency ICE	(P-56-12)	-	C-12-130	2/26/2013	0.01	0.06	0.22	0.00	0.01
Emergency ICE	(P-4-13)	-	C-13-06	4/10/2013	0.02	0.20	1.07	0.00	0.02
Emergency ICE	(P-28-13)	-	C-13-42	proposed	0.00	0.00	0.07	0.00	0.00
Boiler	(P-28-03(a))	-	C-13-72	proposed	0.04	0.65	0.78	0.00	0.06
Boiler	(P-83-06(a))	-	C-13-75	proposed	3.38	3.07	5.20	0.51	5.96
Woodworking	(P-44-13)	-	C-13-84	8/8/2013	0.00	0.00	0.00	0.00	2.46
TOTAL					5.55	7.90	16.51	0.54	8.91

COMMENTS: These permits are sorted by date the ATC was issued. According to Rule 3.4 Section 221, a major modification is calculated based on all creditable increases and decreases from the source over the period of five consecutive years before the application, including the calendar year of the most recent application. Therefore the applicable years are August 2008 through August 2013.

The following changes were made to this worksheet from the last update (12/20/2012):

(1) Only active PTOs and ATC C-13-42, C-13-72, and C-13-75

Engineer:

Typed Initials
ER

Date:

Typed Date
8/21/2013

Reviewed by:

Date:

8/23/2013